

# AUTOSPORT

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EVERY FRIDAY

Vol. 3 No. 19  
November 9, 1951

BRITAIN'S MOTOR SPORTING WEEKLY



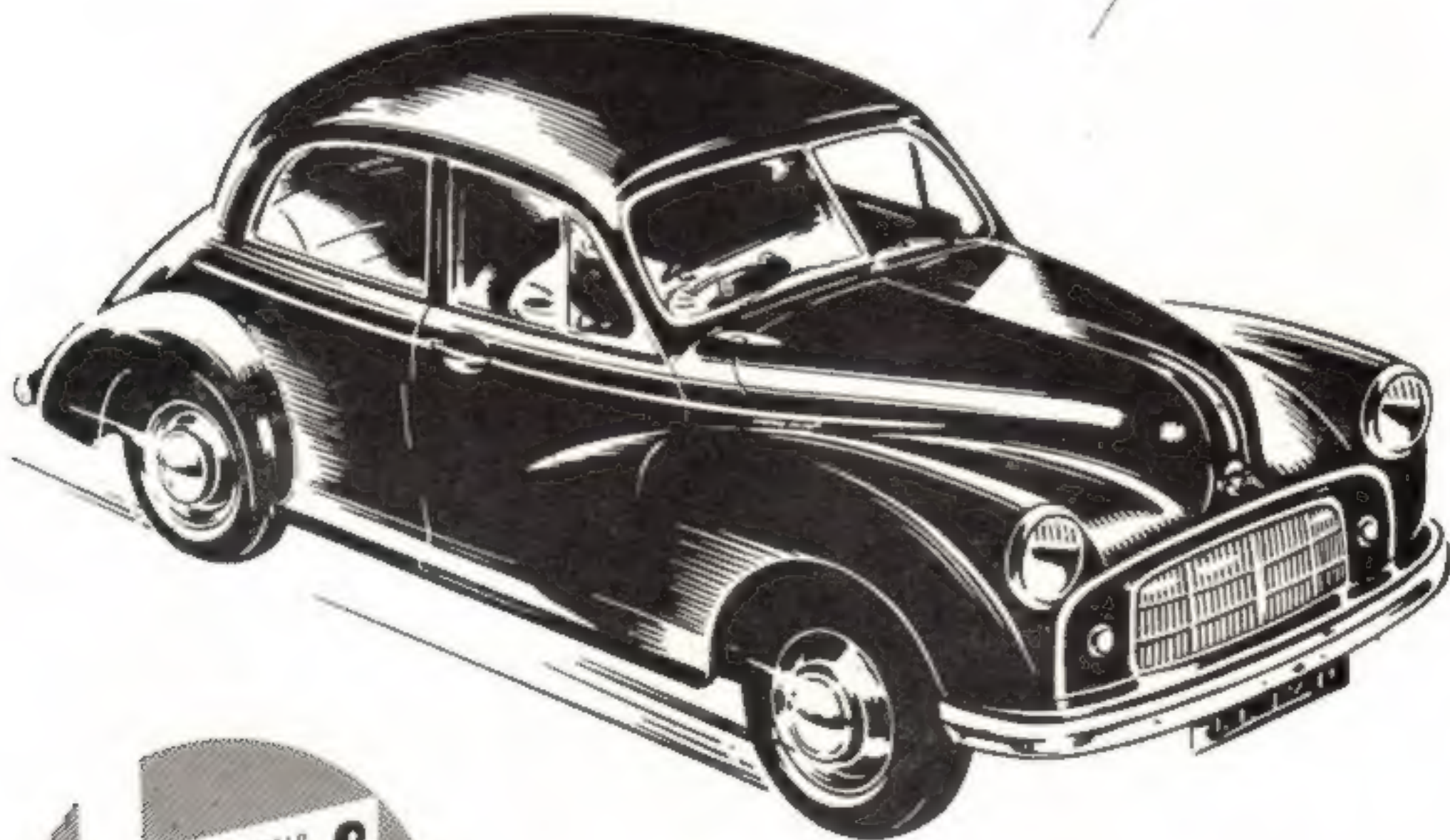
## IN THIS ISSUE

A TECHNICAL SURVEY OF THE CAUSES OF GEAR  
WEAR — THE KNOWLAND TROPHY AND VESEY CUP

TRIALS, fully illustrated reports — JOHN BOLSTER —  
RUSSELL LOWRY — BARCLAY INGLIS — KIRBY LONSDALE



"FOR EASY WINTER STARTING  
**GIVE ME CASTROL**  
**EVERY TIME**"



*This winter . . .*  
Nuffield recommend Castrol XL for  
Morris, Wolseley, Riley and M.G. cars



# Autosport

BRITAIN'S MOTOR SPORTING WEEKLY

Incorporating "THE MOTOR CLUB"

Managing Editor: GREGOR GRANT

Vol. 3. No. 19.

November 9, 1951

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## NOTICES

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## EDITORIAL

TODAY (9th November) a new Battle of Hastings will be fought. The famous Cinque Ports resort is the scene of the driving tests to decide the awards in the M.C.C. *Daily Express* National Car Rally. This 1,200 miles event, which has sprung from last year's very successful "1,000 Miles", bids fair to become one of the most important and popular rallies in the National Calendar. The reason is not far to seek. A modest entry fee, the backing of a great newspaper, a well-chosen route, no complicated driving tests, the excellent M.C.C. organization, and, above all, the exciting adventure of 48 hours' continuous driving, add up to the type of event which is bound to attract a huge entry from experts and beginners alike. Also, as was demonstrated at Torquay last year, a surprisingly large number of absolute tyros accomplished a simple-looking kerb parking test properly, and a correspondingly high percentage of reputedly top-line competition drivers failed. This sort of thing is good for the Sport, and does more than anything else to encourage novices who otherwise might be reluctant to take part in events which attract the "names" in competition motoring.

\* \* \*

THERE is one very important aspect of International Motor Sport which should be brought to the notice of the new British Government and to all whose business it is to sell motor-cars and components in foreign markets. At the conclusion of all big Continental events, there are social functions at which scores of very influential persons are present. Many speeches are made, and the main theme is the country which has produced the successful car or cars. This is bound to have an effect on V.I.P.s who have a direct interest in the trading policy of their particular countries, and it is not difficult to see that a great deal of business may come the way of nations which build successful racing and sports-cars.

\* \* \*

NOW that the trials season is upon us, AUTOSPORT receives letters every week from readers who cannot stand the thought of reports containing pictures of (to quote one correspondent) "horrid, dirty little machines fabricated by out-of-work tractor designers with D.T.s." Avid racing fans should realize that trials have a very large following in this country, and that these events form the very background of club life, and as such are every bit as attractive to competition-minded folk as are International races.

## —OUR COVER PICTURE—

**LIVELY VETERAN:** The ex-Reggie Tongue, 1933 Aston Martin team car at the Bentley D.C.'s recent Firtle Hill event, in the hands of its present owner, Bill Elwell-Smith.



**GUESS WHERE**—and you will probably be wrong! Bill Ferguson (Cooper "1,000"), the eventual winner, leads Pope's XK 120 Jaguar in the recent Johore Grand Prix, Singapore. (Photograph by Straits Times.)

**PEGASO** intend to apply for an entry of three cars at Le Mans next year.

**NEXT WEEK'S** issue will contain a fully-illustrated report of the big M.C.C. *Daily Express* National Rally.

**JUAN GALVEZ** (Ford) won the great Argentinian production car road race for the second successive year. He covered 5,255 miles in 75 hrs. 48 mins. 55 secs. The route was Buenos Aires-Posadas-Buenos Aires.



## Pit and Paddock

**LOUIS ROSIER** will drive a Ferrari next season. The Rosier stable will comprise Louis (director), Maurice Trintignant and Yves Giraud-Cabantous, a couple of 2-litre, and a 4.1-litre Ferrari.

**GORDINI-SIMCA** is said to have packed up now as a racing organization. However, the "wizard" himself tells us that he will have a brand new twin-o.h.c., 2-litre car for next season's Formula 2 events. He will probably market his own 1.4-litre sports-car, the Gordini.

**MERCEDES-BENZ** team for rallies and sports-car races will probably be Hermann Lang, Rudolf Caracciola and Karl Kling. "Rudi" is doing the Monte Carlo Rally (with a Swiss competitions licence), but it is almost certain that the trio will be the official M.-B. entry at Le Mans.

**THAT** ambitious quarterly *Auto Course* has had a good reception abroad. Those detailed lap charts and post-mortems, so ably conducted by Editor Stanley Sedgwick, are invaluable to participants and students of motor-racing, particularly as all information is published in four languages.

**PORSCHE** are preparing a new open two-seater type for 1952 sports-car racing.

**DELAHAYE** have a new sports-car in the offing. The engine will doubtless be based on their new 2-litre Jeep power-unit.

**LOUIS CHIRON** will drive a "1,900" Alfa Romeo in the Monte Carlo Rally. Dutchman Gatsonides will pilot a Humber Super Snipe.

**NICE GESTURE:** Lord and Lady Blandford stopped over at Barcelona on their way back from a Mediterranean honeymoon. Lady Blandford offered to take *AUTOSPORT'S* race report and photographs back to London by air, if there was any difficulty in getting them over in time. As it so happened, Irvine Chalmers-Watson delivered the copy safely for us.

### LIGHT CAR TOUR DE BELGIQUE

**Renault, Fiat and Volvo** Successes

**A** TWO-DAY, 786-mile Tour de Belgique for light cars was organized by the Liège A.C. on 27th and 28th October. The event was

divided into three categories for under 750 c.c., up to 1,100 c.c. and up to 1,500 c.c. cars, and starters totalled 117. Despite heavy rain which made adherence to schedules difficult, particularly in the Ardennes, where a set average speed had to be maintained, many competitors finished without loss of marks. However, a secret check near the end helped to decide the winners, who proved to be Redelé/Navez (Renault) in the smallest class and Georges/Woit (Fiat) in the 1,100 c.c. class. In the 1,500 c.c. category the Swedish Volvos were outstanding, two cars tying for 1st place, another gaining an equal 3rd with a Peugeot. Amongst other notable performances by foreign cars, DKWs finished 3rd and 5th in the 750 c.c. class, and a Swedish Saab came 2nd to the 1,100-winning Fiat, with Czech Skodas in 4th, 6th and 8th places. In this class a British Singer was 5th.

### RESULTS

**Up to 750 c.c.:** 1, Redelé/Navez (Renault); 2, Landon/Debroux (Renault); 3, Potier/Flammang (DKW).

**750 c.c. to 1,100 c.c.:** 1, Georges/Woit (Fiat); 2, Stasse/Hermand (Saab); 3, Delarge/Olivier (Simca).

**1,100 c.c. to 1,500 c.c.:** 1, J. and M. Franquet (Volvo) and Struckmeyer/Truillet (Volvo); 3, Laplume Bros (Peugeot) and Kreischer/Stolmans (Volvo).



## SPORTS - NEWS

### ITALIANS FOR MEXICAN ROAD RACE

Two Ferrari 2,560 c.c. Berlina models sailed from Genoa at the end of October to take part in the great Pan-American road race through Mexico. Drivers will be Ascari and Villoresi with one car and Taruffi and Chinetti in the second. Felice Bonetto is a further probable entry from Italy, driving a Lancia Aurelia.

Motors, Ltd., and the Alta Car and Engineering Co., Ltd., makers of Formula 2 racing-cars.

The countervailing subsidy scheme, designed to encourage the development of British racing-cars, was first limited to Formula 1 and Formula 3 machines, and this newest concession recognizes the merits of recent British activities in Formula 2 events.

### FANGIO AND GONZALEZ

HAVING between them cleaned up six European Formula 1 Grands Prix, plus numerous creditable places and six circuit lap records, Argentine drivers Juan Manuel Fangio and José Froilan Gonzalez are flying back this week to Buenos Aires for the winter recess.

### PURCHASE TAX ON FORMULA 2 RACING-CARS

THE R.A.C. have issued a statement to the effect that, following further negotiations with the appropriate Government Departments, a countervailing subsidy in respect of Purchase Tax is to be paid to H.W.

### BRITISH ENTRIES FOR THE MONTE CARLO RALLY

AROUND 80 British entries have been received for the Monte Carlo Rally, which takes place from the 22nd-29th January, 1952. The list contains the names of drivers from every corner of the British Isles, and besides many experienced rally and trials drivers, several racing drivers are competing, amongst them Stirling Moss (Sunbeam-Talbot), the Ecurie Richmond pair, Eric Brandon and Alan Brown (Jaguar and Ford respectively), Oscar Moore (Sunbeam-Talbot) and David Murray (Ford).

Of Britain's premier Rally drivers, Ian Appleyard and his Jaguar are capable challengers for outright success in the "Monte", versatile Ken Wharton will again drive a Ford, and manufacturer Donald Healey, winner in 1931 with an Invicta, will again be competing with one of his own cars; W. H. Waring drives a Jaguar, Tommy Wisdom a Daimler, Mrs. Wisdom has a Sunbeam-Talbot, and other notables include J. D. Sleeman, Dorothy Stanley-Turner, Edgar Wadsworth, Mr. and Mrs. Allard, J. Clegg, Cyril Corbishley and Ron Flockhart of Edinburgh. The name of Cecil Vard does not appear in the list, a matter for great regret after his

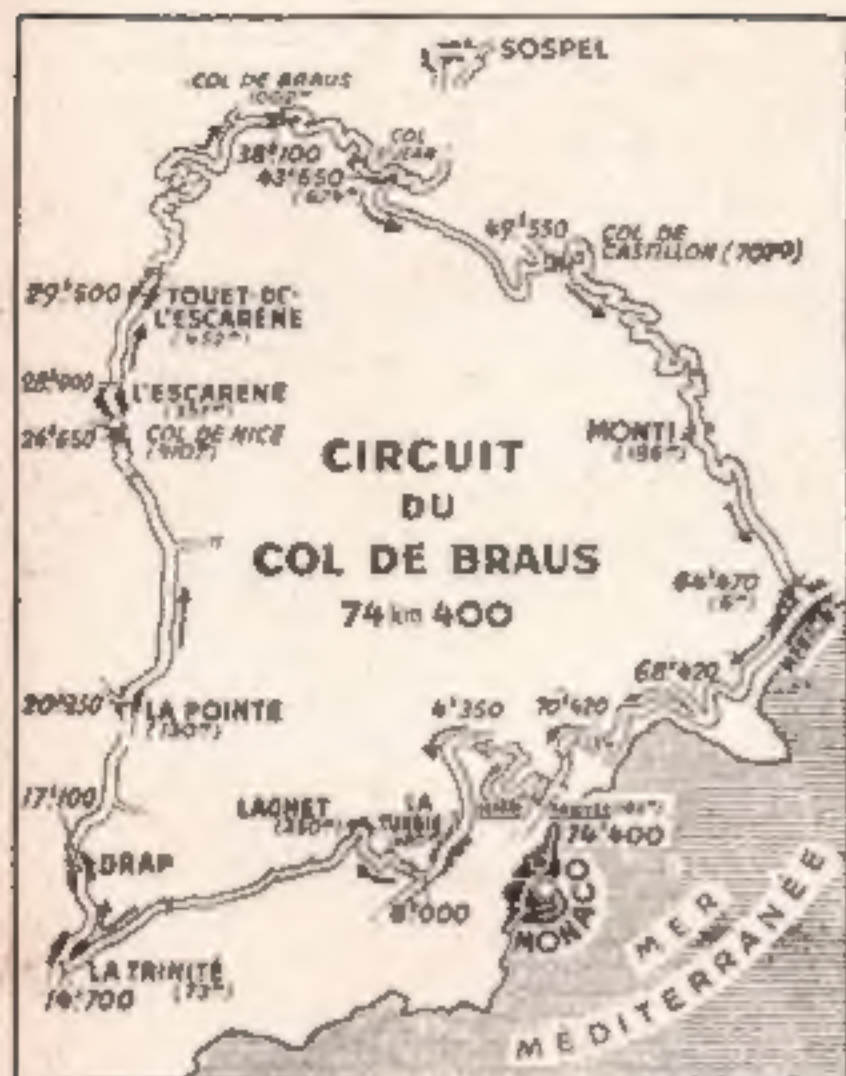
fine performance last year; and Irish representatives for 1952 are R. J. Adams and C. W. Eyre-Maunsell of Northern Ireland and B. McAldin of Eire.

Only touring closed cars may compete in this year's rally, and no engine modifications are permitted. All cars over 1,500 c.c. must be at least 4-seaters, and below 1,500 c.c. a minimum of two seats is permitted. The unpopular clause excluding the use of engines built by manufacturers other than those of the car has been cancelled, and the Speed-Regularity test is supplanted by a Regularity Test over a 74-kilometre route.

The full list of competitors from the British Isles is as follows:—

Adams, R. J., N. Ireland (Humber); Allard, Mrs. E. (Allard); Allard, S. H. (Allard); Anderson, M. B., Scotland (Hillman); Anderson, T. A. (Sunbeam-Talbot); Appleyard, E. I. (Jaguar); Austin, R. W. (Bentley); Banks, J. W. E. (Bristol); Bartlett, C. F. (Vauxhall); Blockley, N. (Singer); Blumer, J. (Ford); Bolton, P. R. (Standard); Bradnack, B. E. (Jaguar); Braid, P. K. (Jowett); Brandon, E. (Jaguar); Brinkman, E. N. (Riley); Brown, A. (Ford); Channon, E. H. (Wolseley); Clegg, J. (Sunbeam-Talbot); Corbishley, C. (Lanchester); Couper, W. M. (Bentley); Croft-Pearson, S. E., Isle of Man (Jaguar); Dargue, D. W.

(Riley); Edge, C. (Austin); Ellison, R. F. (Jowett); Eyre-Maunsell, C. W., N. Ireland (Humber); Fender, G. J. (Riley); Flockhart, W. R., Scotland (Jaguar); Garrad, N. (Sunbeam-Talbot); Grounda, F. P. (Jowett); Harper, P. C. E. (Hillman); Harper, W. A. R. (Vauxhall); Hartwell, G. R. (Sunbeam-Talbot); Healey, D. M. (Healey); Hobson, H. C. (Austin); Holt, G. R. (Ford); Holt, R. E. (M.G.); Johnson, Mrs. O. I. (Riley); Kemsley, J. H. (Hillman); Lamb, Fl./Lt. W. D. R. (Ford); McCaldin, B., Eire (Sunbeam-Talbot); McCracken, A., Scotland (Ford); McKenzie, W. A. (Sunbeam-Talbot); McKerracher, G., Scotland (Austin); Mansbridge, J. R. J. (Jaguar); Miller, K. B., Scotland (Alvis); Milton, G. N. (Sunbeam-Talbot); Moore, O. (Ford); Morton, R. J. (Standard); Moss, S. (Sunbeam-Talbot); Murray, D., Scotland (Ford); Nelson-Harris, R. (Jowett); Odell, L. (Jowett); Offley, C. B. (Sunbeam-Talbot); Pilmor-Bedford, H. (Humber); Porter, R. C. (Riley); Pownell, Major A. (Sunbeam-Talbot); Quero, E. W. (Hillman); Reece, J. G. (Ford); Roberts, H. C. (Austin); Russell, R. V. (Jowett); Shaw, J. L. (M.G.); Sleeman, J. D. (Sunbeam-Talbot); Sneath, E. S. (Sunbeam-Talbot); Stanley-Turner, Miss D. M. M. (Alvis); Stoddart, J., Scotland (Vauxhall); Taylor, D. O'M. (Austin); Vaughan, Mrs. M. L. (Jowett); Wadsworth, E. B. (Standard); Walshaw, R. (Hillman); Walton, P. G. (Bristol); Waring, W. H. (Jaguar); Warren, A. P. (Riley); Warwick, D. G. (Jaguar); Wharton, F. C. K. (Ford); Wick, M. (Jaguar); Wilkins, G. (Jaguar); Wisdom, Mrs. E. M. (Sunbeam-Talbot); Wisdom, T. H. (Daimler); Zetter, P. (A.C.).



The Col de Braus Circuit, 74 kilometres in length, over which the Monte Carlo Rally Regularity Test will be held.



Sports-News—continued.

**END OF SEASON RECORDS**

**New Class H Long-distance Figures by Monopole—German "500" Does 163 m.p.h.**

BESIDES Tony Crook's recent run at Montlhéry with the two Frazer-Nashes, a Panhard-engined Monopole, driven by a team of seven drivers, spent a three-day session on the famous French track from 10th to 12th October. Object was to beat Amedée Gordini's International

**MONTLHERY:**

Gerard Crombac took these pictures during Tony Crook's remarkable "hour" figures with production Frazer-Nashes. (Top) Passing the stands with the Replica. (Above) Coming into the pits with exhaust pipe trailing. (Left) A tired but happy Tony Crook after his magnificent high-speed demonstrations.

Class H records for 2,000 miles, 5,000 km. and 48 hours, set up in 1937, with a Fiat, and the even longer standing 24-hour figure established in 1934 by P. Maillard-Brune with an M.G. Midget.

The Monopole succeeded by a comfortable margin, raising the 2,000 miles record from 64.35 m.p.h. to 86.2 m.p.h.; the 5,000 km. figures from 64.11 m.p.h. to 84.7 m.p.h.; the 24 hours from 76.3 m.p.h. to

86.4 m.p.h., and the 48 hours from 64.1 m.p.h. to 78.7 m.p.h. Drivers in this fine demonstration of high speed stamina were de Montrémy and J. Hémar, joint winners this year of the Index of Performance Cup at Le Mans, and P. Hémar, Dussous, Cornu, Guerne and Liénard.

On the Ingolstadt-Munich autobahn on 26th October, Ferdi Lehder, German 500 c.c. exponent, broke

four international Class 1 records with a special car, fitted with streamlined body and a supercharged vertical twin N.S.U. engine. On his fastest run, for the flying kilometre, Lehder clocked the remarkable speed of 163.1 m.p.h., bettering the previous figure, set up in 1949 by Lt-Col. Goldie Gardner's M.G., by 8 m.p.h. His other new records are flying mile, 158.9 m.p.h. and five kilometres, 160.2 m.p.h. (both previously held by Gardner) and 10 km. at 155.7 m.p.h., all subject to official confirmation by the F.I.A.

**100 French "Monte" Entries**

FRENCH entries for the Monte Carlo Rally totalled 148, from which 100 were selected. Amongst them are Louis Rosier (Talbot), Eugène Chaboud, 1947 Champion of France (Renault), Mme. Itier, José Scaron and Pierre Meyrat (Simcas), Guy Mairesse (Dyna-Panhard), J. Savoye (Singer), Mesdames Hustinx, Hammersley and Gordine, Trevoux (Delahaye) and Marcel Becquart (Jowett).

**That "Ulster" Date**

WE now learn from the Ulster W.A.C. that the date fixed for their Formula 1 Ulster Trophy next year is neither that given in the 1952 International Calendar nor as published in the letter from the club's Press secretary in last week's issue—it is Saturday, 7th June, which fits nicely between the Monaco G.P. on the 1st and Le Mans on the 14th.

**Jaguar Exports**

DURING a period of record deliveries in the quarter ending 30th September, Jaguar Cars shipped over 96 per cent. of their output to the export market. Of this high percentage, 61 per cent. has been sent to dollar markets.



November 9, 1951

# MERRICK'S VESEY VICTORY

Successful Trials Comeback with  
Atkinson Special — Timed Sec-  
tions and Test prove decisive

THE Vesey is one of the sport's senior events, having a history reaching back into the earliest days of road competition—and though run at club level rather than on the grand scale of such Sunbac classics as the Colmore, it is a trial that has held a high place among its peers, and awards in it are keenly sought after. Being based on the deep loam of Shropshire, and ridges such as Wenlock Edge, the going is generally sticky, and it was extraordinary that for last Saturday's trial, in spite of torrential rain overnight, the course proved to be dry enough to offer plenty of wheelgrip. This involved a high proportion of "clean"—well, fairly clean—sheets, and threw the destiny of the awards into the Driving Test. Though the almost surgical efficiency of the organization precluded those quick after-glances through the marshal's cards, that sometimes reveal an inner story of success and failure to the sharp-nosed presshound, it is obvious that the timing of a part of two observed sections had a potent effect on the result sheet. Whether by being thrown off their accustomed methods or through over-anxiety, some of the mightiest fell from grace and were penalized for being outside "bogey". Avoiding these perils successfully, after an absence from trials of three long years, Ray Merrick carried off the main trophy, driving Pat Atkinson's Special. The announcement of this result from the Back Room brought a round of exceptionally warm applause. Clean on all hills and fault-free on time,



*Alec Francis (H.R.G. Mercury), winner of the Carlex Cup, at the start of the timed climb of Longville I in the "Vesey".*

he was well among the best on the driving test and so had all the answers.

But to the trial itself. Secretary Jack Woodhouse having indicated the "beauty spots" on our map, the photographic Penn and the writing pen set off from the start at Morville, where the 35 car entrants were being quietly marshalled in tens, with an interval between each group as a shock-absorbing device.

At Middleton Priors came the Driving Test—on the Y-fronted principle. Forwards up one fork, back, and forwards again leaving a marker to starboard, port and then starboard again. Cyril Corbishley (C.C.S.) shone here with a time of 15.4 secs., an advantage he was destined to lose later on. L. T. Oliver (Oliver) equalled this, but he, too, was to suffer, as was Ron Lowe (Dellow), who scored 15.6, sharing the notch with the ultimate victor. Cyril Bold, first time out with the new venture, found his

front-end lightness added nothing to navigability, but managed 16.2 secs.

The first hill was struck at Longville, where the upper part was timed as well as observed. A crafty downhill take-off into an immediate left-hand climbing turn called for delicate throttle work, especially with the larger cars, if an undignified and wasteful slither into the bank was to be avoided. Francis, with the H.R.G. Mercury, judged it nicely, but R. H. Bland (Blandford) slid right out and clouted the far tree roots. C. P. Nichols (Dellow) lost time sliding outwards, but recovered. N. V. Terry (Dellow) was over-powerful and spun a good deal, but G. B. J. Johnson (Stauniford) dived in confidently and was soon away round the upper hairpin, deep in leaf-mould. F. D. Woodhall (H.F.B.) was cool and confident, S. A. Cracknell (H.P. Special) came up with a real swing, but a crunch and silence preceded the field telephone announcement that S. A. Sidwell (Dellow) had charged the bank and his front wheels had gone cross-eyed. The enforced interval gave a chance for a large tractor to be brought down the hill, so the pair of pen(n)s moved off to Eaton Hill, whose mud and ruts were an obstacle in the pre-war knobbly tyre days.

Having negotiated the lower reaches, competitors had to fork right across a pair of gullies and proceed upwards until they embedded themselves in between narrowing banks at Section 6. Norman Terry (Dellow) didn't penetrate beyond the fork, but Francis took the H.R.G. Mercury right up to score a bull on the stop notice. Nichols (Dellow) did the



*J. D. Hollingworth (Austin) on the lower slopes of Longville II.*





#### Merrick's Vesey Victory—continued.

same and stuck tight. Oliver (Oliver) was another who registered relief at seeing that he hadn't got to go any further. Bland (Blandford) swept through, and Hollingworth made a good fighting climb, his little Austin engine pulling like a lion. Woodhall in the 1,184 c.c. H.F.B., a neat, if brief, car with tubular chassis and torsion bar i.f.s. slewed anxiously as the wheels bit suddenly after the fork. Horace Roberts, grinning broadly, hurled his Allard across the ruts, then spun to a standstill. Too much power in the wrong place, said the pundits. Ron Lowe (Dellow) disappeared upwards with a steady throttle, as did Ken Delingpole, who brought forth the comment that if you never touch the ground you can't fail.

#### Marshbrook

Marshbrook, seen from below, looked steep and slimily grassy. Higham, the first arrival, failed low down. Oliver conferred an interview on the mobile B.B.C. unit and then swept up at speed. G. J. Rea (Citford) sounded hesitant at the take-off, but picked up quickly. Horace Roberts (Allard) redeemed himself by a storming climb. Of Ken Burgess (Allard) the notes read "ditto—sideways". Bill Sleeman (Sleeman) went up scratching his ear and eating an apple. The lady appearing on the programme as J. D. Box (Dellow) smiled confidently and was obviously enjoying herself.

Highfield Farm looked promising. Last year it played merry mayhem with the whole entry. Moreover, the first pitch through the farmyard, with a wicked kink in it, was the second of the timed sections on which so much was to hang. Up above the yard the track grew steeper and more slippery as Hollingworth (Austin), Nichols (Dellow) and Woodhall

(H.F.B.) found to their cost. Cyril Corbishley (C.C.S.) went up like a train, but had missed a gear while under the stopwatch, so dropping a fatal mark. Ken Burgess (Allard) waffled upwards convincingly, but came to rest in section 4. Lew Tracey (Dellow) was clean, but rattled somewhere underneath from contact with an uncharted rock in the ruts of Eaton. Nobody touched it but "Lucky" Lew. Reg Phillips climbed at tremendous speed, his arms a blur at the steering wheel. He, too, had lost a cog in the farmyard and blotted his time, as did John Sleeman. Cyril Bold shot up the top sections, but found mud-in-the-eye didn't help on the timed part. Doc Lilley (Dellow) had plenty in hand and changed up for section 4. Back in the farmyard, E. J. P. Reynolds was noted for nice placing of his Dellow through the kink. J. Deeley (Cranford) however, got it all wrong and clouted the gatepost. Reynolds re-established neatness. Too-good (Ford) was fortunately the last up—he seemed inclined to take the gate with him.

It was perhaps with some feeling of frustration that the finish was reached—on Stanley Holloway's basis of "... nobody drowned and nothink to laff at at all"—but who was to guess that hills which other Vesey's had found almost unclimbable would this day prove so innocuous. And is there not comfort in having the main results announced at an hour when many trials are still feeling their way down from some mountain-side?

RUSSELL LOWRY.

#### RESULTS

**Vesey Cup:** R. Merrick (1,228 Atkinson Spl). Marks lost 0; Driving test 15.6.

**The Carless Cup:** A. W. Francis (3,917 H.R.G. Mercury), 2; 17.8.

**Watson Glyane Bowl:** C. L. Bold (1,200 Bold), 0; 16.2.

**ROUTE BARRE:** L. J. Oliver (Oliver) was one of the farthest up Eaton Hill in the Vesey.

**1st Class Award:** K. C. Delingpole (1,172 Dellow), 0; 16.4.

**2nd Class Awards:** C. Corbishley (1,446 C.C.S.), 1; 15.4; R. B. Lowe (1,172 Dellow), 1; 15.6; J. D. Sleeman (1,172 Sleeman), 1; 16.2; C. R. Hardman (1,200 Dellow), 3; 16.0; E. J. P. Reynolds (1,172 Dellow), 4; 16.4; L. J. Oliver (1,172 Oliver), 7; 15.4; F. E. Wall (1,172 Dellow), 7; 16.2.

#### MUNSTER AUTUMN TRIAL

This event took place on 28th October over a 60-mile course starting from Cork, with a break for lunch at Fermoy. There were 10 driving tests and no observed sections, this being necessary as the bulk of the entry consisted of everyday saloons. Plenty of latitude was allowed as regards the time schedule.

After a timed hill-climb, competitors proceeded to Barnavara, a steep hill, where a turning test à la Circuit of Ireland, was held. This turned out to be the decisive test of the day when D. Swanton, in a specially hotted-up Ford 10-engined Anglia, and so far unbeaten this year in Cork, retired with expensive noises emanating from his rear axle. R. Tilson (VW) was also in trouble, sliding into the roadside gully from which the car had to be lifted out bodily. Best performances here were O'Leary (Opel), 20.4 secs., Nash (M.G. TD), 20.6 secs., O'Mahony (VW), 20.8 secs. O'Leary again put up best time in test three, reverse and forward around a triangle, but incurred a 5-second penalty for flag-knocking. Test four was a figure-of-eight at a "Y" junction, an unexpected watersplash being incorporated in the middle, following heavy rains the previous night. Then followed a straight-forward forward-reverse-forward, and so to lunch.

After lunch competitors had to tackle the problem of a Le Mans type start. On the homeward stretch there were included a reverse and forward braking test, a roll and brake test and an affair at a "T" junction which was very hard on brakes and gearboxes. The final test put a premium on good cornering and here Nash returned 28.2 secs., O'Leary 30 secs., while H. Morrogh, better known in motor-cycling circles, upheld the Ford marque with 30.8 secs. In all Nash returned best time in six of the 10 tests and ran out an easy winner, being well compensated for his trip down from Limerick for the occasion.

#### RESULTS

**Premier Award:** R. Nash (M.G. TD), 135 points.

**1st Class Awards:** J. D. O'Leary (Opel), 123 points; A. Canty (Ford Anglia), 111 points; M. O'Brien (M.G. TC), 109 points.

**Novices' Award:** J. O'Mahony (Volkswagen), 105 points.





### HUNTING FOR HERTS

**D**URING the evening of Saturday, 27th October, the Herts County Automobile and Aero Club put on a Treasure Hunt for its own members and those of the London Aeroplane Club. The starting and finishing points were in the Club House at Panshanger Aerodrome, between Hatfield and Hertford, and the 25-mile course was tackled by 22 teams. When ready to start, the driver was handed a poem of 150 odd lines which, in addition to keeping him on course, every so often asked questions about his surroundings. The query, "What game would you play with the landlord's daughter?" earned black marks for those who failed to see the checker-board hanging outside the hostelry in question.

After a bout of mental arithmetic by the officials who had stayed at Panshanger the whole evening to drink away the entry fees, the results were announced as follows:—

**Best Performances:** M. E. Nixon.

**Runners-up (Tie):** R. G. Prior and K. P. Stanton.

The tie was decided in Stanton's favour by a race on the aerodrome—on foot. Bad luck for Ron Prior who always seems to just miss the awards.

The party then really got going—somebody said there were 75 bodies in the bar—metaphorical ones of course. Strictly speaking not motor-sport at all, but great fun and many new friends were made.

### JACK VALENTINE WINS IRISH M.G. NIGHT TRIAL

**M**aurice Cavey (M.K.V.) the Best Expert THE M.G. Car Club (Irish Centre) have again run one of their popular and successful events designed to cater for both novices and experts in any type of saloon or open car. Their Night Trial,

on the evening of Friday, 2nd November, was a cheerfully successful event run with the primary object of accommodating the novice and the competitor wishing to use a standard touring car. The route covered about 40 miles of the Dublin and Wicklow mountains in the Sally Gap area and included four special tests, a time check at Ballymutton and two secret checks, Killtown Cross and Crone.

Test One, at Ellenborough, was a forward-reverse-forward affair in which the best time was put up by Maurice Cavey in his Ford-based M.K.V. Pat Irwin (TD) was best in Test two, at Brittas Crossroads, where some very clean and fast runs were made, notably by Kevin Flynn, Mrs. Evelyn Flynn, Harry Rear-don (M.G. 14 saloon), D. Murtagh (Vauxhall 10 saloon) and M. Cavey (M.K.V.).

In Test three, competitors had to ac-

**UP AND OVER:** Ken Bailey, winner of the Waterloo Cup Trial, on 28th October, surmounts Clerk Hill.

celerate uphill over a timed section, fastest being racing driver Joe Flynn, who returned 10 secs. dead with his somewhat special TC M.G. The "dead" engine test was won by Redmond Gallagher, of 500 c.c. Leprechaun fame, with his Healey tourer.

Competitors were penalized for failing to follow the correct course (the secret checks being used for this purpose), for being more than 10 minutes early at a check or for being more than 20 minutes late. The average speed set was only 18 m.p.h., and it was hoped to avoid the almost inevitable "dicing" likely to be so damaging to reputations on these occasions.

The finish was at Bray and only two competitors failed to complete the course. Jack Valentine, the premier award winner, was navigated by that effervescent Norton rider, "Chick" Gibson, and Evelyn Flynn collected the Ladies' Award with the navigational help of racing driver "Dick" Lovell-Butt.

H.A.O'B.

### RESULTS

**Premier Award:** J. Valentine (M.G. TC), 147 marks.

**Class "A", Open Experts:** 1. M. Cavey (M.K.V.), 146; 2. C. K. Flynn (M.G. TD), 144; 3. H. Irwin (M.G. TD), 140.

**Class "B", Open Novices:** 1. R. Gallagher (Healey), 129; 2. T. Lord (M.G. TC), 129; 3. A. Potter (Ford Spl.), 124.

**Class "C", Saloon Experts:** 1. L. Manthorpe (M.G. 14), 125; 2. W. F. Poole (Morris 10), 109; 3. J. Stevenson (Hillman), 107.

**Class "D", Saloon Novices:** 1. A. Spence (Morris Minor), 111; 2. A. R. Jolly (Austin A70), 102; 3. D. Reynolds (Austin A40), 101.

**Ladies' Prize:** Mrs. Evelyn Flynn (M.G. TD), 126.



**PYLON TEST:** Arthur Jolly swings his A70 Austin around on Test 2 of the Night Trial of the M.G.C.C. (Irish Centre).





November 9, 1951

**VICTOR:** H. Sinclair Sweeney, winner of the Knowland Trophy, on Dent's Delight with the ex-Bartlett "Bullet", now fitted with a Vauxhall engine.



hard under the top layer of mud. The first to try, L. Fuller's Dellow, showed how to do it, climbing steadily up the rough gully to swing through the sharp right-hand bend at the top. Jack Paul (747 Austin), competing in his first trial and so far unpenalised, was unlucky enough to have a prop-shaft joint disintegrate; after diving into deep mud below the car to salvage the bits, he retired. Altogether 18 climbed without loss of marks, and only three failed completely.

After a luncheon break at the Spread Eagle, Fernhurst, competitors returned, steaming, into the rain and tackled Cow Track II. This was the same hill, but with a difference—and what a difference! The start was moved some three yards to the right and entailed plunging over a mould into deep mud. For a time it seemed that this was going to stop the entire field, as one after another dived in, lost traction and had to be man-

## A NICE DAY FOR DUKWS

### H. S. Sweeney (Vauxhall Spl.) Wins Cemian M.C.'s Fourth Knowland Trophy Trial

If any keen reader is anxious to capture the atmosphere of last Sunday's Knowland Trophy Trial, let him don warm clothing, add a duffle coat and Wellington boots, call out the Fire Brigade and settle down to read the following while a couple of hoses play over him. For it was in just such an unrelenting downpour that this R.A.C. Championship Qualifying Trial was held, and the fact that competitors, officials and numerous spectators remained uniformly cheerful throughout assuredly demonstrated one of those indomitable traits in our character—or branded some 200 people as certifiable.

Of the 41 entries, 38 set off from the Royal Huts Hotel at Hindhead to make their way to the first hill, *Dent's Delight*. Here occurred the only delay of the event, the tractor turning up very late and taking some considerable time to climb down from its transporting lorry—a spectacular operation carried out in pouring rain in the face of much conflicting advice and before an enthralled, if damp, audience. The observed section, a wet track with a watery take-off and a pool of mud half way up, was not difficult, especially when the loose coating stirred up by the tractor had been dispersed, and all but three climbed successfully, "Golf" Imhof catching the eye amongst those who stormed it at speed. B. Wattridge's Ford 10-engined Peasmarsh Special had track-rod trouble and retired.

*Lawson's Lament*, scored on the bonus system according to the proportion climbed, was deep in glutinous mud, the hollow near the top being particularly well filled with it. Here A. A. Baring (1,712 Cotton) and Alan Day (1,200 Austin) were surprisingly among the seven who lost marks, but 30 got through without penalty. Two sections had been made out of last year's stopper, *Cow Track*, and the first of these (another "bonus" hill), proved unexpectedly easy, being clear of leaf-mould and apparently

handled out. But eventually H. S. Sweeney (1,442 Vauxhall Special S) achieved the impossible and made—if so inapposite a phrase can be used—a clean climb, stamping himself an almost certain winner. All the rest lost the full 10 marks, Jim Appleton (1,486 Appleton) alone amongst them contriving to restart and climb after coming to the usual standstill in the quagmire.

*North Park I*, a long, gradual, rutted slope, was climbed by all the remaining 34. H. Collings's H.F.C. (1,089 c.c.) and

**COW TRACK II:** Arthur Mallock (1,081 Austin) makes a gallant attempt to conquer a hill that defeated the entire entry with the exception of Sweeney.





J. C. Smith's J.C.S. (1,090) having joined the retrials. *Special Test "A"* entailed reversing down a slope forming one arm of a "Y" and roaring up the other to finish astride a line. Best time was returned by Harry Hopkinson in his 1,172 Aus/Ford, slightly modified from last season, with 11.2 seconds. Michael Lawson (1,172 Lotus I) achieved 12.0. G. E. Froy's Dellow 12.4 and Imhof (1,250 Imhof Spl.) 12.6. Tony Rumfitt (1,172 Cotton II) stalled but still recorded a good time. Close at hand, *North Park II* consisted of an S-bend on a steep slope, with the usual muddy start. There were six climbs—Baring, Imhof, Gerry Pentony (1,442 Cyclops), Rumfitt, Lawson and Sweeney—and 28 failures.

*Special Test "B"* sent competitors downhill in reverse for 25 yards with engines dead, whereafter they had to start up and finish astride a line 50 yards ahead. Here again Harry Hopkinson was fastest, with 18.8 seconds, E. G. Spence (1,172 Spence) next in 19.6, and E. J. Chandler (1,172 (S) Chandler Spl.) third equal with Pentony in 20.0 secs., Captain A. M. R. Mallock (1,081 Austin), revving uproariously, a mere fifth slower.

The final section, *Hute Hill*, started where the Special Test left off, climbed steadily and finished with a sharp left turn up and over a bank. This happy result was achieved by one and one only Chandler, whose sharper angle of approach kept him out of the muddiest patch and placed him second in the event. Many of the remainder nearly made it, grounding on the crest of the bank, among them Imhof, Mallock, D. W. Price (1,080 Clayton) and the indomitable Pamela Price (blown Price Spl.) who was the only competitor of the (allegedly) gentle sex.

So back to the Royal Huts Hotel for

tea, during which results were collated. Sweeney emerged the outright winner, with Chandler as runner-up, and B. H. Dees (blown Dellow) the best Cemian member. Aggregate times in the Special Tests were used to decide ties and are shown in the following list of provisional results. Four teams entered for the team award, that consisting of Baring, Imhof and Pentony winning with an aggregate of 236 marks retained, from Chandler, Hopkinson and Spence with 220.

BARCLAY INGLIS.

#### PROVISIONAL RESULTS

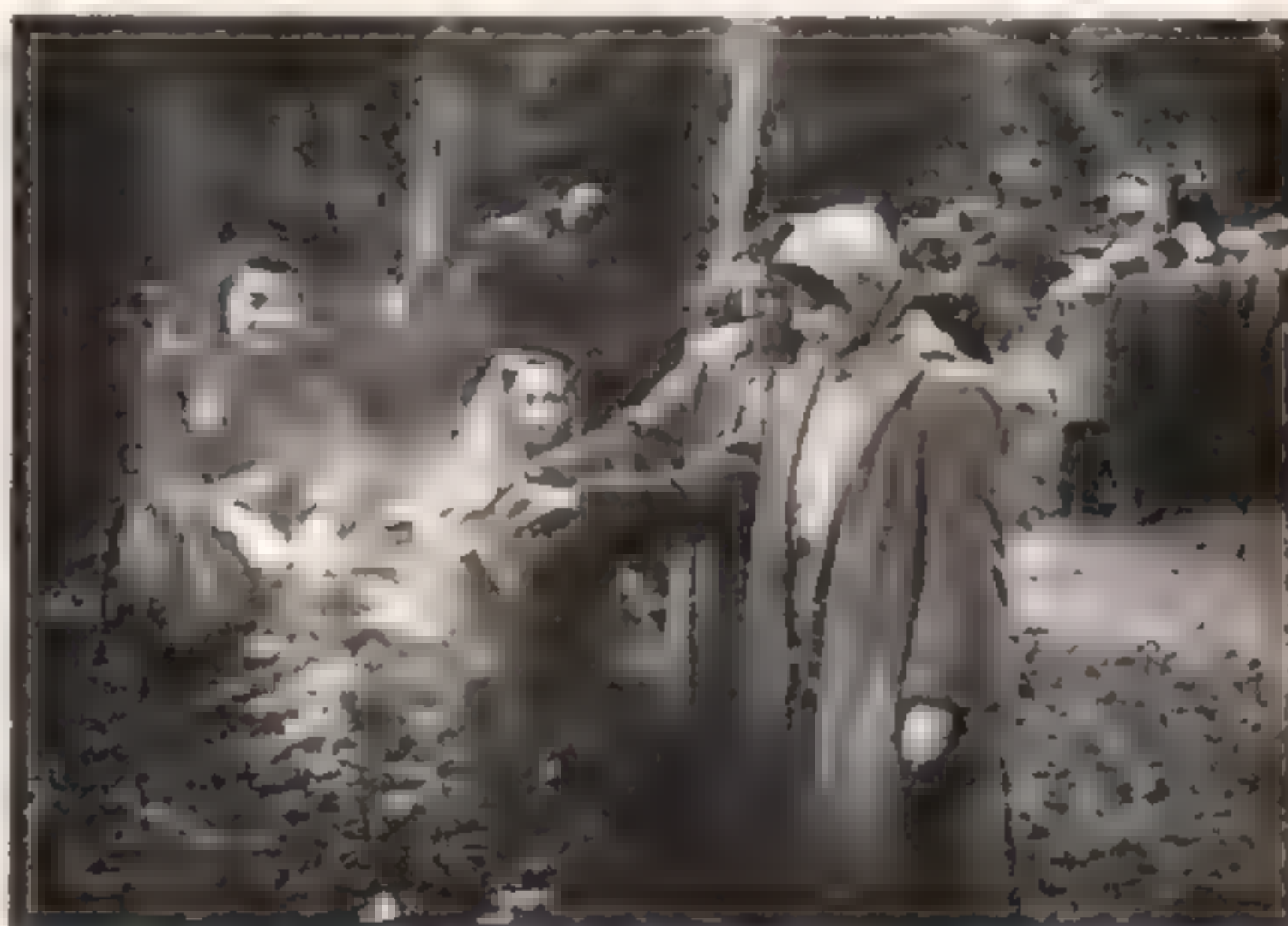
**Knowland Trophy, for Best Performance of the day:** H. S. Sweeney (1,442 Vauxhall Spl. S), West Hants and Dorset C.C., 90 marks.

**Vice-Presidents' Trophy, for Best Performance by a member of the Cemian M.C.:** B. H. Dees (1,172 Dellow S), 68 marks.

**Autumn Cup, for Best Performance by a member of an Invited Club:** E. J. Chandler (1,172 Chandler Spl. S), Hants and Berks M.C., 80 marks (32.8 secs.).

**First Class Awards:** G. Pentony (1,442 Cyclops), North West London M.C., 80 marks (33.0 secs.); A. G. Imhof (1,250 Imhof Spl.), North West London M.C., 80 marks (33.6 secs.); M. H. Lawson (1,172 Lotus I), Kentish Border C.C., 80 marks (38.4 secs.); A. E. Rumfitt (1,172 Cotton II), Kentish Border C.C., 78 marks.

**Second Class Awards:** A. A. Baring (1,172 Cotton), N.W. London M.C., 76 marks; H. Hopkinson (1,172 Aus/Ford), H. and B. M.C., 70 marks (30.0 secs.); E. G. Spence (1,172 Spence), Horsham and District L.C.C., 70 marks (33.6 secs.); E. W. H. Brookes (1,172 Brookes), Kentish Border C.C., 70 marks (37.2 secs.).



**CAMP-FIRE:** (Right) Not an impromptu sing-song, but resourceful spectators drying themselves during one of the wettest trials in living memory. (Below) **MUD PACK:** D. Read (Dellow) tries his luck on Cow Track II.



#### THE PENNINE TRIAL

SUPPLEMENTARY regulations are now out for the Yorkshire S.C.C.'s closed Pennine Sporting Trial which will be held on Sunday, 18th November, over a 35-mile course near Halifax, incorporating eight or more observed sections, a driving test, and a timed climb.

Entries close next Monday, 12th November, and should be sent to P. J. Clay, Hollings House, Sowerby Bridge. Starting time is 10.30 a.m.

\* \* \*

#### U.H.U.L.M.C.

A SOCIAL Evening for club members and their friends will be held on Friday, 9th November, at the Ship Tavern, Lime Street, E.C.3, from 6.30 p.m. onwards. Snacks and sandwiches will be available. Plenty of parking space will be found in the local side streets.



# GEAR WEAR

**A Treatise on Gear Forms, the  
Maladies Afflicting Them, and  
the Value of Efficient Lubrication •**

**BY  
KIRBY LONSDALE**

**M**ODERN trends in automobile lubrication practice emphasize, and quite rightly so, the importance of using high grade engine oils if the best results, both from the viewpoint of performance and economy, are to be obtained from the power unit. To substantiate these edicts, figures are quoted which purport to prove how small has been the amount of wear, both in the cylinder bores and bearings, over extended mileages. In fact the condition of the cylinder bores and bearings of an engine can often be accurately assessed by reference to the speedometer.

What of gear wear however? Neither the wear which takes place on the teeth of gears in a gearbox, nor the wear on a crown and pinion is ever expressed in terms of mileage. The reason for this may simply be due to the fact that a set of gears either transmits power or it does not, the factors of noise and backlash, for the sake of argument, being ignored. There is no perceptible gradual falling off in efficiency as apparent in an engine by the increased amounts of fuel and oil which must be consumed to produce a given output. An alternative reason may be attributable to the generous proportions of the teeth, and that given adequate lubrication, practically all the gears on a car will outlast several engines, and frequently even the chassis and body as well.

## Classification of Gears

All gears employed in automobile construction can be grouped conveniently according to the disposition of the shafts upon which they operate.

The first group comprises those gears which operate on parallel shafts and includes engine timing wheels, all gearbox gears and rack and pinion steering elements, the rack being considered as a gear of infinite radius.

The second group includes all gears operating on shafts which would intersect if projected. Obvious examples are bevel type crown wheels and pinions, sun and planet differential gears and the gears employed to drive certain overhead cam shafts.

The third and last group embraces gears operating on shafts which are neither parallel nor intersecting. These include worm and hypoid rear axle drives, oil pump drives and distributor or magneto drives when the power is taken from the camshaft.

## Tooth Forms

Tooth generation in the first group may take either of two forms—spur or helical. Both are common in automobile

practice, the former being employed for the indirect gears in some gearboxes and the latter for engine timing wheels and gearbox constant mesh gears.

When spur gears are in mesh there may at times be only one tooth of each gear in contact; at others perhaps two or three. At one instant the load may be transmitted by two teeth and then as the gears turn a third tooth may be brought into action. The load will then be shared by three teeth thus relieving the pressure on the preceding two teeth. On further rotation one of the preceding two teeth will pass out of mesh and so throw its share of the load on to the remaining two teeth until a new third tooth comes into mesh to receive its share of the load.

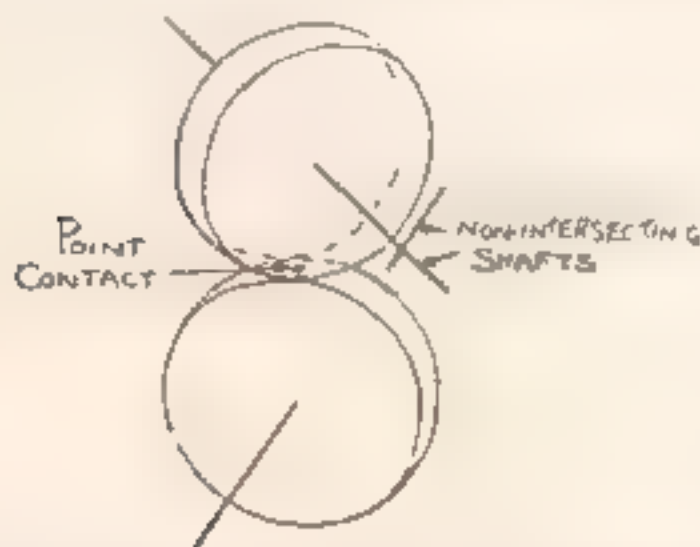
Gears are made of either iron or steel (although fibre and plastic materials are gaining favour in some light drives) and are therefore to some extent elastic. They will in consequence deflect slightly under the conditions of varying load as rotation progresses. This deflection which fluctuates with the fluctuating tooth load, is sufficient to alter slightly the relative positions of the teeth in mesh, so that under load they will not fit perfectly one with another. At moderate speeds this tooth deformation is of little consequence but as speeds increase it may be the cause of noisy operation and excessive wear.

Helical tooth forms provide power transmission without the fluctuating tooth loads and deflections which characterize spur gearing. The helix angle or angle of twist of the tooth form, is so arranged that one end of a tooth will mesh before the other end of the preceding tooth has disengaged. As the angle is increased the number of adjacent teeth in simultaneous contact is also increased. However, even if only two adjacent teeth are in simultaneous contact, a very smooth transfer of power results.

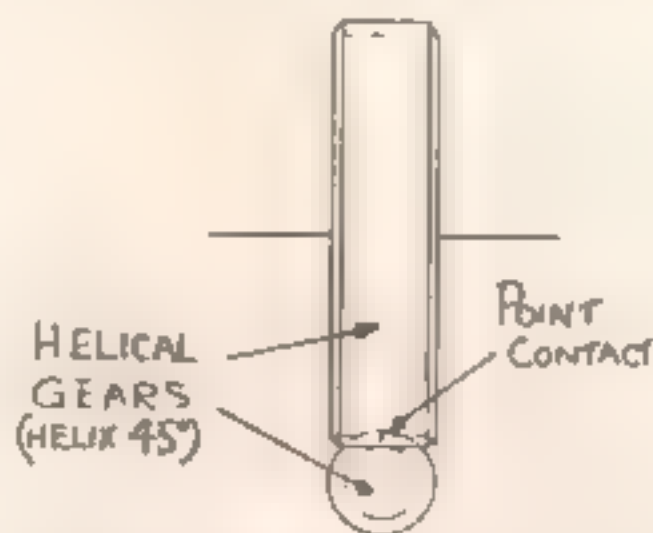
An inherent drawback to helical gearing is the end thrust occasioned by the angularity of the teeth. Normally this is absorbed by ball bearings or thrust collars and does not constitute a problem. An alternative method is to arrange for two helical gears to be fitted on the same shaft in such a manner that their end thrusts will cancel out.

In the second group the gear teeth are cut on the face of conical surfaces. When teeth are cut straight across conical faces bevel gears are produced. The shortcomings of these gears are similar in every respect to those which beset spur gears operating on parallel shafts.

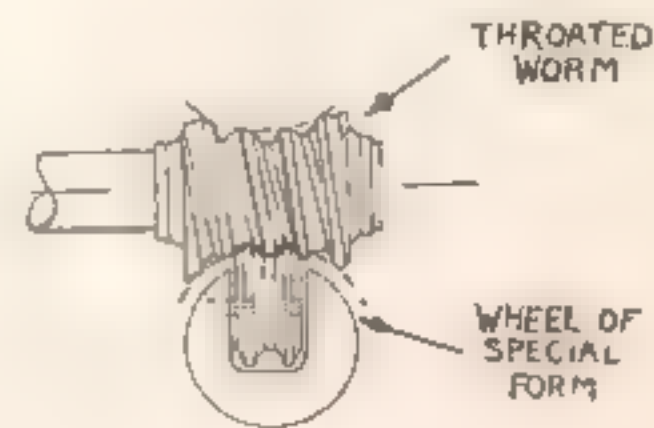
They are overcome, however, in exactly the same way as in the first group, by twisting the gear teeth so that more than



1. Helical gears on crossed shafts. When the angle between the shafts is 90° the helix angle must be 45° on each gear to transmit power.



2. When one helical gear is small compared to the other, conditions approximate a non-throated worm drive.



3. In the Marles steering gear the worm is throated but not the wheel which takes a special form.



one adjacent tooth is in simultaneous contact. In this case however, as the teeth are on conical surfaces the geometrical shape is not helical but spiral. Bevel gears with twisted teeth are in consequence known as spiral bevel gears. They effect the same smooth quiet transmission of power between intersecting shafts as is typical of helical gears on parallel shafts. Spiral bevel gears are normally found only as crown wheels and pinions where smooth silent operation is essential. The sun and planet wheels in the differential undergo limited motion only and ordinary bevel gears are therefore in common usage.

When shafts cross one another in different planes, as in the third group, power can be transmitted by exactly the same type of helical gears as used on parallel shafts. In this instance, however, contact between the meshing teeth will be at a point (1) and not along a line as is the case when helical gears are disposed on parallel shafts. Examples of this application are distributor and oil pump drives powered by cam shafts and certain speedometer cable drives taken from the gearbox output shaft.

When the driving gear is very small compared with the driven gear, we have in effect a non-throated multi-start worm gear drive (2). This type of gear, while able to transmit power quietly and smoothly cannot be put under heavy loads without damage to the teeth due to the point contact. Therefore, to enable worm gears to transmit appreciable power, as is obviously required in rear axle reductions, the teeth of the driven gear are machined to wrap round and envelope the driving worm. Line contact is thereby contrived.

In some steering gears the worm is throated to an hour-glass shape (3). An even greater area of contact is thus established and the unit loading on both the worm and wheel is drastically reduced, resulting in decreased wear and a consequent longer service life.

The last type of gear to be considered is the hypoid spiral bevel, now gaining favour as a rear axle reduction unit. Its development is interesting (4). When two cones operate on intersecting shafts they will make contact along a line. If one shaft is slightly altered so that it crosses the other in a different plane the cones will still roll upon each other and transmit power but the contact will no longer be along a line but at a point. Teeth cut on the cones will likewise only have point contact, which quite obviously is an undesirable condition.

It can be overcome, however, by changing the straight sided cones into curved sided cones, which the mathematician defines as hyperbolic surfaces. This explains the term "hypoid". Teeth cut on these surfaces will make contact along a line and will transmit heavy loads very efficiently and quietly. When the off-set is only slight hypoid gears resemble spiral bevel gears.

#### Tooth Contact

The line of contact between the teeth of meshing spur gears lies straight across each tooth face, and first occurs at the base of a driving tooth and at the tip of a driven tooth. It moves across the tooth face as the gears rotate until it disappears at the base of the driven tooth and at the tip of the driving tooth. Such a line of contact sweeping across an oil wet tooth surface at right angles to the direction of motion presents a most favourable set of conditions for the formation of a surface separating oil film.

In helical gears a similar set of conditions exists except that in this case contact is along a curved sloping line extending across the faces of the teeth. The actual slope is dictated by the angle of the helix. The line of contact will normally be spread over two or more tooth faces in helical gearing since two or more teeth on each gear will be in simultaneous mesh. As the gears rotate, however, the sloping contact line sweeps right across each tooth face and so presents favourable conditions for oil film formation.

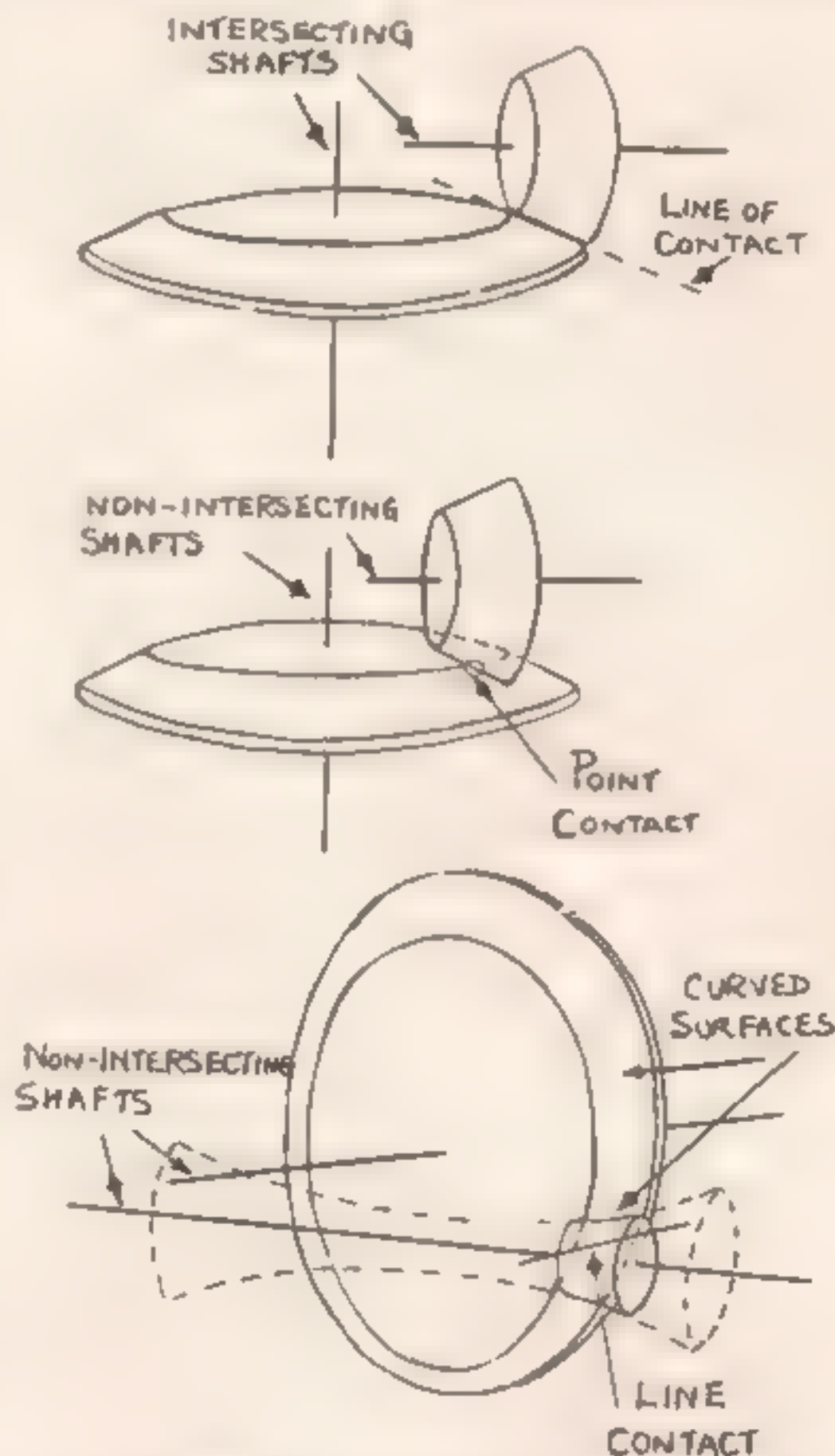
The line tooth contact on bevel gears, as on spur gears, is straight and sweeps across the teeth in a direction at right angles to itself, thus promoting oil film formation. Spiral bevel gears involve a curved line of contact similar to that on helical gears and induce oil film formation in exactly the same way.

When helical gears operate on crossed shafts, contact is at a point only, and although this point is enlarged by plastic deformation of the metal to form a small area, it is nevertheless insufficiently large to carry any appreciable load without rupturing any oil film which may be present. Metal to metal contact thus occurs with consequent increases in friction

and wear. These remarks also apply to non-throated worm gears.

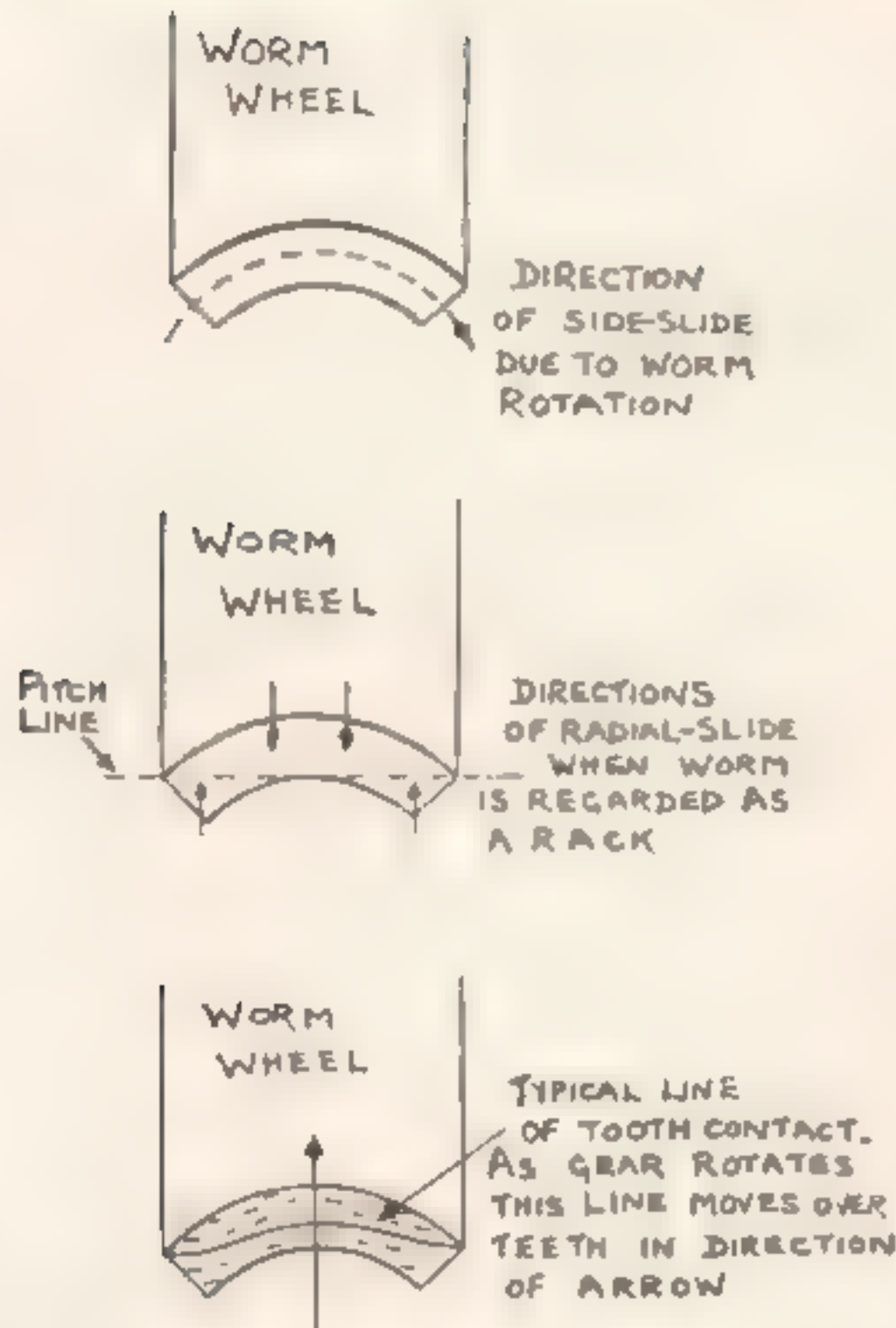
Throated worm drives and hypoid gears produce involved forms of tooth contact. Let us first consider the case of a worm and throated wheel (5).

Due to the machining of the worm wheel, the point contact is developed into a line which extends radially across the wheel tooth surface concentric with the axis of the worm. This line is not geometrically part of the circumference of a circle centred on the worm axis but as a rough approximation we may regard it as such. There will normally be more than one tooth in simultaneous mesh with the worm and therefore there will be several lines of contact in simultaneous existence. As the wheel rotates these lines of contact sweep across the tooth surfaces from the tips to the roots and therefore might at first appear to offer operating conditions extremely favourable to oil film formation. This movement we will term radial slide formation. Unfortunately, however, this is only half the story. Rotation of the wheel is effected by the screw effect of the worm as it rotates at a comparatively high speed. This introduces a factor of slide in a direction which is roughly along the line of contact and which we will term side-slide. Now, the gear ratio of worm drives in rear axle reductions is such that the peripheral speed of the worm is always considerably in excess of that of the driven wheel,



4. The development of the hypoid rear axle drive. The generation of teeth on curved surfaces enables line contact to be established between the mating gears on crossed shafts.





5. These three illustrations show the sequence of events in worm and wheel operation. It is important not to confuse the directions of radial slide with the direction of contact line movement.

and therefore the amount of side-slide will be considerably in excess of the amount of radial-slide. Because of this, the resultant of the two will be similar to the side-slide alone and therefore the advantageous effects of the radial-slide may be discounted in practice.

The line of tooth contact in hypoid gears is very similar to that which occurs in spiral bevel gears and takes the form of a sloping line across the faces of two or more teeth depending upon the angle of twist. However, as in worm gears an element of side-slide is involved by virtue of the pinion offset, the extent of which is important. When only slight conditions approximate to spiral bevel gearing, the amount of side-slide is small and therefore oil film formation is encouraged. When the offset is considerable, however, side-slide predominates and conditions are similar to those existing in worm gearing.

It is interesting to note in passing that the side-slide element present in hypoid gears and the non-existent oil film forming tendencies are the reasons for employing special extreme pressure lubricants in this type of rear axle unit. Lubrication difficulties are further increased by the fact that hypoid rear axle reductions incorporate two hardened gears and these are normally sanded wet up to the limits of the steel from which they are constructed.

Before leaving the subject of tooth contact a simple generalization may prove useful. In all types of gears having a line contact the direction of sweep will be outwards, i.e. from the root to the tip, across the tooth faces on driving gears and vice versa on driven gears.

#### Reasons for Wear

As previously stated, provided it is given adequate lubrication, is not stressed beyond its mechanical limits and is given

every care and attention a set of gears will last almost indefinitely. However, these ideal operating conditions are not always forthcoming, in which event gears fail to transmit power smoothly and quietly. Gear teeth seldom fracture (unless overloaded); destruction normally manifesting itself as damage to the contacting surfaces.

If gears continue to operate after the meshing surfaces have been damaged the tooth contour may be seriously impaired, and once this has taken place, smooth and silent transmission of power will cease. Tooth wear is generally attributable to inadequate lubrication although operating conditions such as overloading, misalignment, shock loading, etc. may be in part or wholly responsible.

The terminology used to describe various types of gear wear is very extensive and in many cases repetitive. We will therefore confine ourselves to the main seven operational types of gear wear, namely, abrasion, pitting, scoring, flaking, scuffing, ridging and rippling.

#### Abrasion

Abrasion (6) results when abrasive materials enter between meshing teeth and slowly wear away the contacting surfaces. In steel gears, once the case hardened surface has been worn through, subsequent wear will, of course, be accelerated. If the abrasive is very fine and freely mixed with the oil, a highly polished surface may be produced. A coarse abrasive, on the other hand, will tend to leave scratch marks on the tooth surfaces and the worn teeth will have a rough uneven appearance.

The occurrence of abrasion is not common in automobile operation since the only types of abrasive likely to become entrained in either gearbox or rear axle units are sand and atmospheric dust, and the inclusion of either is practically impossible if all due care is taken when servicing the unit.

Should signs of abrasion be apparent on a set of gears, however, the remedy lies in immediately draining the oil from the unit, flushing out thoroughly with a very light flushing oil and refilling with a recommended gear oil.

#### Pitting

Tooth surfaces of brand new gears although appearing dead smooth to the naked eye, may in fact contain minute high spots. There may also be variations in the surface hardness. These two variations cause an uneven distribution of load across the face of the teeth. As the teeth mesh the entire load is transmitted from one gear to the other via localised high or hard spots, thus producing heavy localised stresses, which are repeated at every revolution until sub-surface fatigue finally occurs, and minute pieces of the surface break loose to form "pitting" (7). This occurs at or below the pitch line.

Now in spur and bevel gearing the entire load is transmitted on the pitch line as each tooth passes through the centre of mesh and therefore once pitting has commenced the load concentration on the roughened surfaces may tend to aggravate the condition until the tooth surfaces are destroyed (8).

On the other hand, once the high spots have been worn off, the resultant surface may be smooth, in which case loading will be uniform and any tendency to pitting will cease.

Helical and spiral bevel gears present a more favourable resistance to pitting. This is because the line of tooth contact slopes across the tooth face and is not coincident with the pitch line. Therefore, although pitting may damage that portion of the contact line which crosses the pitch line, an unpitted portion will nevertheless always be present above and below the pitch line to carry the load on the tooth. It is quite possible, therefore, that pitting will cease as soon as the high spots and hard spots have been rubbed down to the pitch line area of the contact line.

In worm and hypoid gears the side-slide helps to wear away any high or hard spots before pitting can present any serious disability.

If pitting in a set of gears causes rapidly increasing deterioration of the tooth surfaces, complete destruction of the tooth profiles can be averted by decreasing the load on the gears. In a motor car this is not always possible and the only real remedy is to replace the gears, although some measure of success may emanate from the use of a heavier lubricant, which will tend to increase the areas over which localized loads are concentrated.



### Scoring

Sometimes tooth surfaces will be found scratched or scored in identical positions on each tooth. This is due to sharp protuberances on the surfaces of the mating teeth which are sufficiently large to pierce the oil film and form scratch marks in the same direction as the line of contact moves across the tooth surfaces (9). The sharp projections may be the result of a number of causes such as advanced pitting, rough finish or pressure welding.

In very serious cases of scoring the scratched surfaces may themselves throw up projections which will in turn score those teeth which carried the original projections. The effect is cumulative and total tooth surface failure may ensue if steps are not taken to remove the cause directly the first signs of scoring appear. Remedial action is simple. The sharp projections on the guilty teeth should be removed with a fine carborundum stone.

### Flaking

Flaking is somewhat similar to pitting except that whereas pitting is the result of imperfect tooth surface finish flaking results from overstressing, which may be due to overloading, misalignment or indeed any condition promoting metal fatigue.

It results when the load on a tooth bearing surface is so intense that the metal tends to form a wave just ahead of the line of contact as the gear rotates. The sub-surface metal below this wave-like movement is stressed beyond its elastic limit and therefore fractures, thus causing large flakes of metal to be sheared away from the rubbing surfaces (10). In hardened gears the removal of these flake-like portions of metal will be definitely pronounced but in unhardened gears such as bronze worm wheels a peening action may obtain which will still remove thin metal flakes as the sub-surface fails but will nevertheless tend to smooth out the tooth surface.

The types of wear described so far have all been attributable to mechanical failure of the gear itself. It now remains to cover gear failures and types of wear which arise from faulty lubrication. These are legion but can be condensed into three main shortcomings, the first of which is known as scuffing, the second ridging, and the last rippling.

### Scuffing

Scuffing is a gear tooth surface failure which is directly due to the inability of the oil film to carry the imposed load and so keep the mating surfaces separated. Overloading or shock loading may be the cause, although the more usual cause



6. **ABRASION:** (Top) Tooth surfaces are worn away by the continual grinding or lapping effect produced by an abrasive present in the oil. Wear is even over the entire contacting surface and the finish is usually smooth.

7. **MILD PITTING:** (Centre) The first stages of pitting are the small pieces of metal which break away from the tooth surfaces along the pitch line leaving minute indentations or pits. After these over-stressed portions have broken loose further pitting may cease and normal wear may polish out the indentations.

8. **ADVANCED PITTING:** (Below) When the first stages of pitting give way to the advanced stages, tooth contacting surfaces are completely destroyed at the pitch line and the profiles are damaged.

9. **SCORING:** (Top) When sharp projections on tooth surfaces are sufficiently proud to rupture the oil film the surfaces of mating teeth will be scratched or scored as illustrated.

10. **FLAKING:** (Centre) Overloading or shockloading causes the sub-surface metal to fail, which in turn results in large flakes of the surface breaking loose.

11. **MILD SCUFFING:** (Below) This is a type of wear due to inadequate lubrication. The teeth show signs of metal to metal contact and of a wiping action as they roll over one another. On the teeth of driving gears the metal is wiped away from the pitch line.

12. **ADVANCED SCUFFING:** (Top) In severe cases the metal actually welds between the meshing teeth due to the extreme pressures involved. The result is complete destruction of the tooth surfaces.

13. **RIDGING:** (Centre) Mild scuffing over long periods causes the surface metal to flow towards the pitch line on driven gears and so form a ridge.

14. **RIDGING:** (Below) On driving gears the tendency is for a groove to be formed across the tooth surfaces, since the metal is wiped away from the pitch line area.



emanates from the use of an incorrect lubricant. In either event the oil film is ruptured and metal to metal contact occurs, first in the area of the pitch line and then towards the tips of the teeth on driving gears and towards the roots on driven gears. This contact results in a tendency for the tooth surface metal to be wiped in these directions, and tell-tale marks occur on the tooth surfaces (11).

Now, if the load on the gear teeth is further increased the oil becomes even less able to maintain a surface-separating film, and under these circumstances the entire tooth surfaces will show signs of severe scuffing due to pressure welding and actual metal flow (12). The rough surfaces which ensue will almost invariably set up scoring and also flaking.

At the first signs of scuffing a hal can usually be made to further deterioration by the use of a heavier lubricant or by the adoption of one containing an extreme pressure or anti-welding agent.

Advanced scuffing on the other hand is entirely incurable since the profiles of the teeth sustain severe wear and damage. A more suitable oil might tend to stop further damage but the only real remedy is to remove the affected gears and replace them. A subsequent retail of thicker or additive type oil will then show a marked increase in resistance to wear.

#### Ridging

When gears showing signs of mild scuffing are left in operation for extended mileages under insufficient loading to cause pressure welding and advanced scuffing, a condition known as ridging may result.

As previously mentioned, scuffing takes place towards the pitch line on driven gears and away from the pitch line on driving gears. Continual wiping and a continual tendency to plastic flow will therefore ultimately result in the formation of ridges along the pitch line area on driven teeth (13) and grooves along the pitch line on driving teeth (14).

Once these ridges and grooves have formed the profiles of the teeth are irreparably damaged and replacement is the only possible cure, although an alternative oil might tend to decelerate the plastic flow of the metal by repairing the ruptured separating oil film.

#### Hypoid Gear Wear

Steel to steel hypoid gears, even when correctly meshed and lubricated, always incur a very slight amount of metal to metal contact and therefore the tooth surfaces of correctly operating gears will have a burnished appearance with negligible wear. Indications of unsatisfactory operation and types of wear are exactly the same as those already described with the addition of a form of wear peculiar to hypoid gears and normally only encountered at low speeds known as rippling or fish scaling.

This is thought to be caused by wave-like motions of the tooth surface metal ahead of the pressure area, somewhat similar to those responsible for flaking. Each wave, as it is formed and pushed up by the resultant sliding motion of the meshing teeth, work-hardens and resists further deformation. The line of contact then advances over the hardened portion and the process is repeated. The net result is the formation

of a series of small wave-like ripples at right angles to the resultant lines of slide.

The initial stages of rippling are not in themselves deleterious and can be restricted by the use of an extreme pressure type of lubricant. If such a lubricant is already in use when the ripples occur, then the cause is purely mechanical—either misalignment, overloading or incorrect design. The last-mentioned can normally be entirely discounted unless, of course, an alien set of hypoid gears is being used as might be the case in a "special".

Continued service after rippling has commenced will cause sub-surface metal fatigue, and flaking, as explained earlier, will ensue. The pinion, since it has less teeth than the wheel among which to distribute the load imposed will nine times out of ten, display a greater degree of rippling, flaking and, in very severe cases, scoring as well.

Sometimes the otherwise smooth polished tooth surfaces of a hypoid pinion may accrue a number of parallel ridges slantwise across the working surface. These ridges are smooth and continuous and no surface failure is apparent, although, of course, the very existence of them indicates that plastic flow of the surface metal has taken place and that the metal is in consequence being cold worked by the gear operation.

Ridging continues until the fatigue point of the metal is reached. Then sub-surface cracks develop and small portions of the surface break loose, leaving a pitted line along the top of each ridge.

This form of pitting may occur over the entire working surface of a hypoid gear and is therefore entirely different from the purely mechanical type of pitting which occurs on helical and spur gear tooth faces and which is mainly confined to the pitch line area.

The remedy in the early stages of hypoid pitting is as for ridging, i.e., the employment of a more suitable lubricant, it being assumed that the mechanical operating conditions meet all requirements. In very severe cases the cause should be ascertained and the worn gears replaced, as the tooth surfaces and profiles will be destroyed and noisy and uneven operation will follow. This is, of course, entirely divorced from the smooth, silent transmission normally associated with hypoid gears.

#### Normal Wear

Having dealt, if not at great length, at least in some detail, with the main types of abnormal gear wear, it will not be inopportune to close this review with a brief description of normal gear wear and so perhaps reassure readers who may be apprehending that state of apprehension and despondency evinced by the horticultural novice who finds himself confronted with the chapter on pests.

Provided a set of gears is correctly designed, made from correctly selected material, operated under ideal conditions of load and correctly lubricated, little or no wear should be apparent on the tooth faces. Normal wear in the presence of a full surface-separating oil film merely consists of a burnishing action by reason of which the tooth surfaces work-harden, become polished and finally reach a condition where further wear ceases entirely.

## BOOK REVIEW

### Speed Triumphant.

Author: Pierre Fisson.

Size: 5½ ins. x 7½ ins. 188 pp. With illustrations.

Publishers: Putnam & Co. Ltd., 42 Great Russell Street, London, W.C.1.

Price: 12s. 6d.

THIS is a remarkably good documentary of modern motor-racing, admirably translated by M. P. Moseley from Pierre Fisson's *Les Princes du Tumulte*, originally published in France last year. It deals with the adventures of the Gordini-Simca racing team as seen through the eyes of the only fictional character in the book, one Jean-Pierre L'Archange, who has newly joined the Gordini équipe.

The background, and backroom boys of racing are presented in a most authentic fashion. Technically, *Speed Triumphant* is much more accurate than the majority of books written in similar vein, although the author appears to be rather optimistic regarding the power-output of the supercharged and unsupercharged 1.4-litre Simca engines. Also, Harry Schell's Cooper is given a 2-litre engine, and both Stirling Moss and John Heath are credited with driving E.R.A.s in a Formula 2 event.

The late Raymond Sommer is introduced on several occasions, but the author gives a rather false impression of the great French driver. Sommer would never have behaved during practice in the way attributed to him. It is untrue to suggest that he resented being passed to the extent of retaliation by refusing to give way to a young driver on a corner.

G.



# Correspondence

## The International Calendar

WITH reference to the recent correspondence on the subject of the International Calendar, while it is recognized that the F.I.A. have a very difficult task in sorting out all the claims for international dates, there have certainly been some surprising results!

This last season, for instance, saw a succession of National Grands Prix every fortnight from the end of May until the middle of July, which must have imposed a great strain on the racing teams, but then two months followed without one! Monza in September was followed by another gap of six weeks before the final one. Surely the whole series could have been spaced out better to the benefit of all?

Again, why should organizers be allowed to alter their dates once they are fixed by agreement to the detriment of others; viz., the Italian G.P. this year, mentioned by Mr. Bowles?

Two years ago this country "soft pedalled" for international dates in response to a general request, and we suffered for it. Britain nowadays takes a far more prominent interest in the sport, and I feel that our representatives to the F.I.A. should ensure that our events do not get overshadowed.

Reverting to the Calendar in general, a class sports-car race within a week of a Formula 1 event can very adversely affect the latter; similarly a Grand Prix in close proximity to a Formula 2 race of promising character can take many promising entries. Date and location have their repercussions and one certainly wonders at times if these principals carry enough weight when the committee is formulating its programme.

K. J. BLYTH

BOXMOOR, HERTS

## Continental Touring with a Vintage Car

ON the 28th September I returned from a holiday which proved my most enjoyable one for many a year, covering a distance of 2,500 miles from start to finish, passing through France, Switzerland and Italy, and traversing several passes en route, such as the Gex, Faucille and Mont Cenis, which is 6,400 ft. high.

The car in which I completed this tour was a 1923 Sunbeam four-seater open tourer, in its original condition; a truly remarkable car which gave not the slightest trouble, mechanically or otherwise, even on the passes, which it took with consummate ease although laden with three persons and a mountainous pile of luggage. The objective of this trip was the Italian Grand Prix at Monza, where we aimed to lend a little support to the B.R.M.s. Their non-appearance marred an otherwise enjoyable holiday.

We found Italy to be a very car-conscious country, people turning out in dozens to see the Sunbeam, and plying the occupants with questions of cylinder bore and stroke, etc., all in rapid Italian. What could not be understood in speech was defined with the hands, at times with some embarrassing gestures when someone joined in halfway; but with repetition, we won the day. Should we park the car at any spot in a town, within a few minutes a swarm of people would crowd round to discuss its merits. At one such halt a crowd of enthusiasts went so far as to christen it with a bottle

of vino and paint in flowing hand the name "Franchesca", and so she remains to my many friends in these countries, but also as a tribute to so fine an engineering firm and host of craftsmen as were Sunbeam of Wolverhampton.

JOHN L. G. FURNESS

## Tyre Cutting in Trials

I SHOULD like, through your columns, to assure Michael Lawson (AUTOSPORT, 2nd November) that although he refers to "some" of the competitors in the recent Bossom Trophy Trial, the only competitors that I heard refer to his tyre cutting as improper were a couple of characters who are notorious for the number of times that they "get out of bed on the wrong side".

In view of the extremely thorough and complete scrutineering laid on by the Maidstone and Mid-Kent Club for this event, and the R.A.C. statement, I would suggest, Michael Lawson, that you pay no attention to this pair, who apparently enjoy moaning more than motoring, and that you carry on with the beautiful drophead trailer that I am told is in store for Lotus.

TONY RUMFITT

SEVEN KING'S, ESSEX.

## Handsomely Said—and Deserved

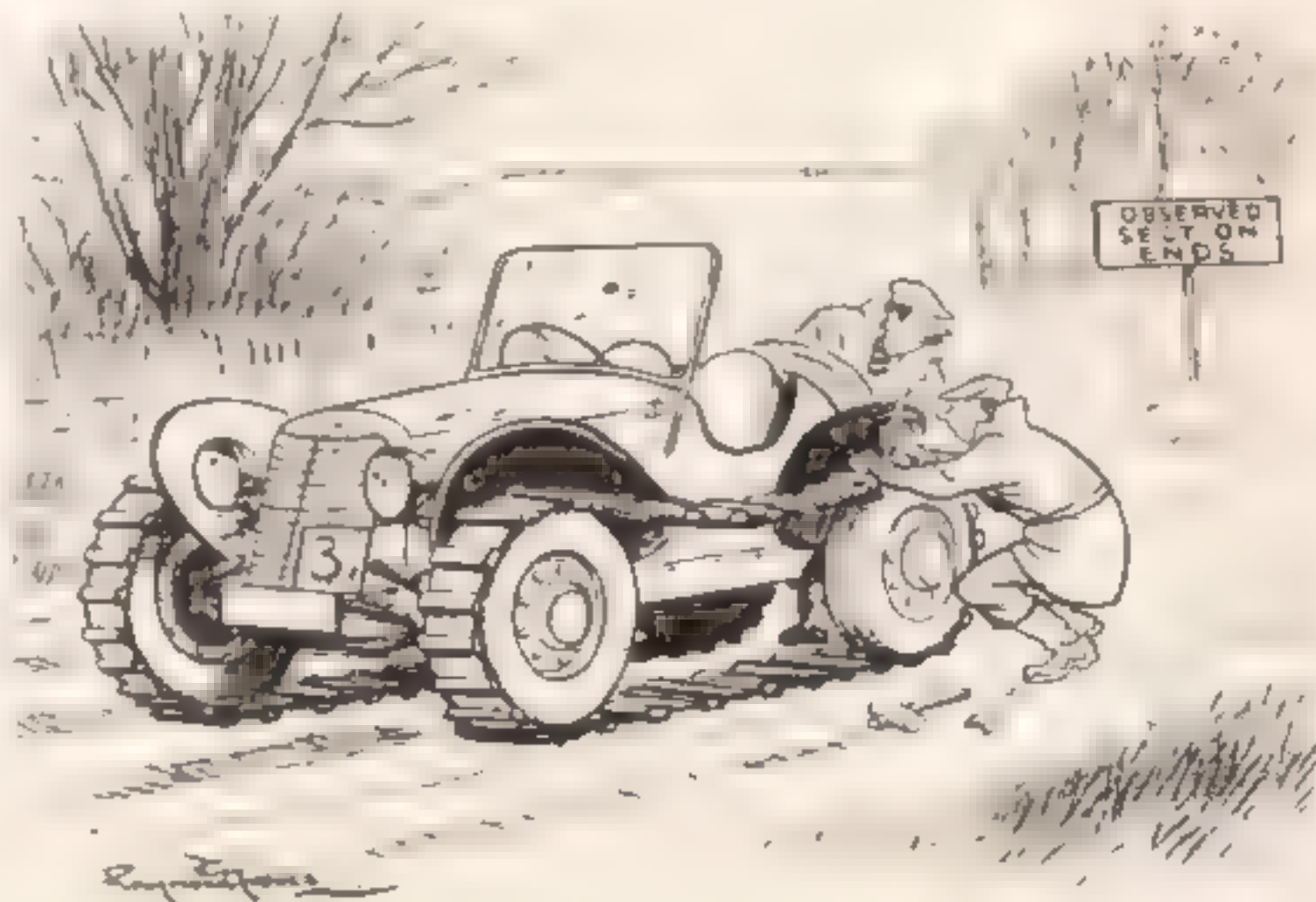
THE 1951 racing season is over, and looking back through the months, I feel that we—the spectators—have more than had our money's worth, so far as first class racing is concerned, and I would like to put on record my personal thanks to all the organizers in this country and on the Continent for the terrific job they have done.

I suppose like the majority I take their hard and unwarded efforts for granted, and it is only on looking back that one realizes that, without them, racing would be in a pretty sorry way. It would be unfair to name any of them, because they are all as important as each other, right down (or up) to the flag-stewards who brave the English climate, such as we saw at Silverstone this year.

Hats off then, to those who risk their pockets, to say nothing of their health, in order to give us our annual dose of motor sport!

MICHAEL C. STEVENS.

PITNEY, S.W. 15





November 9, 1951

*A VERY GREAT CAR": The ex-Jock Horsfall 2-litre, 4-cylinder Aston Martin, seen here during the A.M.O.C. Bol d'Or preliminary tests at Brands Hatch with Mortimer Morris-Goodall at the wheel.*

## Technical and Otherwise

# JOHN BOLSTER TRIES

## "A COUPLE OF QUICK ONES"

AT 6 a.m. on 27th October, I climbed into the back seat of Mr. Wood's fine old 1½-litre Aston Martin. Only a few hours before, I had been accepting the bountiful hospitality of the M.G. Car Club, but the millions of cubic feet of very fresh air, that one absorbs in the stern sheets of an open sports-car, soon revived me to some extent. Our destination was Snetterton, in Norfolk, where I was to do the commentary on the A.M.O.C. Sprint Races.

My microphone was situated on top of a lorry, and after I had been up there for a few hours, pneumonia appeared imminent. However, kind friends remembered me, and the refreshment they passed up saved my life. During the course of my work, I became very intrigued with the circuit, and I remarked to Ernie Stapleton that I would like to try it myself. To my great joy, he immediately put his famous, ex-Jock Horsfall Aston Martin at my disposal, and I felt highly honoured as I took my place behind the wheel.

It was at once apparent that the driving position was perfect, and that all the controls were ideally situated. A momentary touch on the starter button set the engine ticking over smoothly, and as I moved off and ran up through the gears, I at once felt as though I had been driving the car all my life. The power unit has a pleasantly "hard" feeling about it, but never becomes rough at any part of its range. It responds instantly to the throttle, and revs very freely: I should imagine that it produces quite as much power as any sports 2-litre in existence.

It is natural that this efficiency is reflected in an extremely high maximum speed. On top gear, the engine speed goes on and on building up, and one has a marvellous certainty that the unit is virtually unbreakable. The straight at Snetterton was not long enough to determine the ultimate velocity, but it must be in the region of 120 m.p.h.

No superlatives are adequate for the steering. It is surprisingly light, dead accurate, and has no tricks whatever. The ride is distinctly hard, and one feels all the bumps, but the controllability is as near perfection as I have yet experienced. Certainly, this is the best "cart sprung" chassis I have ever met, and it is far superior to a B-Type E.R.A. or a G.P. Bugatti, for instance. The close ratio gearbox could not be easier to change, and it goes without saying that the short central lever is exactly where it ought to be.

The one failing of this car is that it is far too heavy. Its acceleration away from slow corners suffers noticeably thereby, and it is a pity that no appreciable weight reduction appears to be possible. This means that the Aston is handicapped by nearly five cwt. compared with its modern competitors, but it still manages to give them a run for their money. The brakes always have the situation well under control.

The "Horsfall Aston" is a very great car, and the perfect condition in which it is now kept is a fitting tribute to its gallant first owner. A fine car deserves a good driver, and it is delightful to record that we were all lost in admiration for Betty Stapleton's spirited handling of the machine at Snetterton.

After the Aston, I sampled another car which, in a very short time, has become almost equally famous. All the many XK 120 Jaguars that appear at speed events are noted for their terrific performance, but the one that Hugh Howorth drives is far and away the fastest. Although it is outwardly similar to an ordinary "Jag", very careful tuning and preparation of the engine and chassis, coupled with Howorth's virtuosity at the wheel, have made this one of the most successful privately owned sports-cars in the country.

One has often heard the expression, "bags of power, old boy", but here is a case where it really does apply. The acceleration is right in the racing-car class, and



one seems to be up into top gear in a matter of yards, with the seat still hitting one smartly in the back. 100 m.p.h. is left behind at quite an early stage of the game, and the acceleration remains vivid far past that moderate speed. The maximum is formidable indeed, in fact it is as high as that of some machines currently running in Formula 1 events.

The engine remains astonishingly smooth and quiet, apart from a rough period around 5,300 r.p.m. It is backed up by a clutch and gearbox that do all the right things, and, of course, the pedals are properly placed for "heel and toe". The brakes are noticeably better than on a normal XK 120, and I had to use them pretty smartly when I misjudged the tremendous speed at which I was approaching a corner.

The suspension irons out all the bumps, and one would almost think the course had been resurfaced after driving the old Aston. Exactly the right degree of understeer is provided, and one can use the full performance, all the time, without any sawing or fighting at the wheel. As a competition machine, this car has proved abundantly successful, but as a high-speed touring vehicle of impeccable manners, it would also be hard to beat.

Obviously, the 3½-litre Jaguar is a much faster car than the 2-litre Aston Martin, and it gives a far smoother ride than the more vintage machine. If both cars were taken round a given corner, with no other competitors to force one off the best line, I think the XK would be almost as fast as the Aston. In racing however, one often has to change one's mind and take an entirely unorthodox course, and under those circumstances the Aston Martin would definitely prove superior.

The XK 120 will drift a bend in a delightful manner, but it resents being flung about while it is doing it. The old Aston, on the other hand, can undergo sudden changes of direction with a flick of the wrist, and is quite unruffled if another car suddenly forces it on to an adverse camber. It is all rather uncanny, but the peculiar thing is that one senses, right away, that such manoeuvres are possible. That is not meant as a criticism of the Jaguar, which corners more than adequately, though with a modicum of roll. It simply proves, once again, that only a very few i.f.s. jobs can compare on corners with the ultimate in cart springs, though from every other point of view, the new style is preferable.

It interested me greatly that neither of these cars showed any temperament, and both of them would have been perfectly happy in London's heaviest traffic. The "hotting up" to which they had been subjected had in no way destroyed their attraction as everyday touring cars, and they showed no sign of running on when they were switched off.

When one is watching motor-racing, there is a natural tendency to picture oneself at the wheels of the successful cars, and to imagine the thrill of sliding round the circuit in those thoroughbred machines. I have been lucky enough to do that very thing, and I am duly grateful to the owners for trusting me with their valuable automobiles.

In testing the cars, I also tried the circuit, and I must say that I was most impressed with it. Whether it would be unduly slippery when wet I do not know, but it is a very pleasant course for drivers in the dry, though it is not, perhaps, ideal from the spectators' point of view. But then, what aerodrome is?

★

*"BAGS OF POWER. . . ." Hugh Howarth's XK 120 Jaguar has proved itself one of the most successful privately owned sports-cars in the country. Possessing racing-car acceleration and maximum speed, it is, nevertheless, perfectly at home in London traffic.*

★





# News from the Clubs

Club Secretaries are invited to send details of the activities of their Clubs for inclusion in this section. We would like you to regard this in the nature of a weekly Club Magazine, and a speedy way of informing your members as to future happenings.

## TREASURE HUNTING IN THE SEVERN VALLEY

A well supported Treasure Hunt was held by the Severn Valley M.C. on 28th October. A start was made from the Mytton and Mermaid, Aicham, where the first clue led competitors to the top of The Lord Hill column at Shrewsbury. This must have been the first time for many a long day that Lord Hill received so many visitors!

The clues led from here, via Haughmond Abbey and Battlefield, to the middle of a river at Fitz, where gum boots were the order of the day. At Sharwardine, competitors sought a clue which lay hidden under a milk churn stand, then continued, via the old water-works, to the finish at The Bell, Shrewsbury, where excellent refreshments were provided.

Among the interesting list of objects which had to be collected were an unoccupied black stocking and a live fish in a jam jar. Prizes were presented by Councillor Fullwood.

### RESULTS

1, S. Smith (Morris); 2, G. Cope (Austin); 3, P. Casserley (Austin).

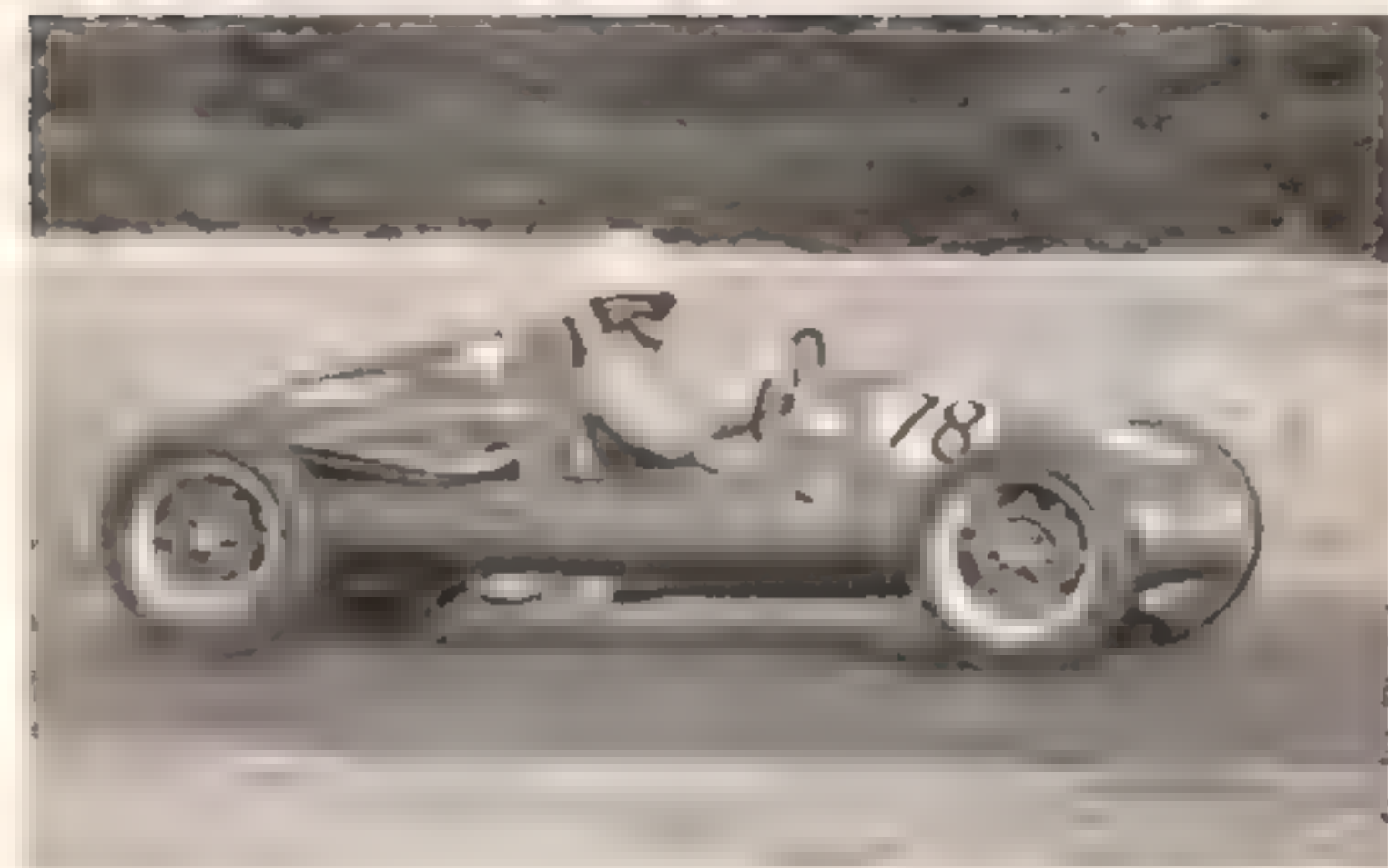
## W.E.C.C. DINNER DANCE

The annual Dinner and Dance, and presentation of awards, of the West Essex C.C. will take place on 6th December at the Royal Forest Hotel, Chingford, E.4.

## PENNINE RALLY

ORIGINALLY scheduled to be held on 27th/28th October, the North Staffs M.C.'s closed invitation Pennine Rally will now, at the specific request of the R.A.C., take place on 17th/18th November. Starting points will be the Mainwaring Arms, Whitmore, Staffs, the Flouch Inn, Woodhead, near Penistone, and Ashby-de-la-Zouch, competitors leaving at one minute intervals between 9 and 10 a.m. The route leads, via various control points, to Scarborough, from whence, following a rest period of three hours, the night section begins, competitors heading for Kirkstone Pass, Windermere, where a Regularity Test will be undertaken.

The second day section follows a speci-



*FROM DOWN UNDER* Australian driver G. Patterson in his Cooper at Brands Hatch, where he has put up some determined performances.

fied route, containing secret controls, to the terminal point of the Rally at the Peacock Hotel, Yeadon, near Bradford. Clubs competing, apart from North Staffs, are, Sunbac, B.A.R.C., Vintage S.C.C., Sheffield and Hallamshire, M.G., Lancs A.C. and Severn Valley.

Bucks. This is reached by taking the main Oxford Road out of High Wycombe as far as the "Lambert Arms", at Aston Rowant (bottom of Dashwood Hill) and turning right for Chinnor. The Committee look forward to seeing members at about 7.30 p.m.

## BERKHAMSTED CLUB NEWS

THE Berkhamsted M.C. and C.C. film show on 19th October was attended by about 50 enthusiasts, some of whom travelled a considerable distance to get there. Like many other clubs, "Berko" celebrated 5th November in time-honoured manner, with fireworks, fun and food; a special competition was staged for the best home-made fireworks.

Future events include, of course, the Annual Dinner, while members are invited to compete in the Chiltern Club's trial on 2nd December and the Lockhart-Bossingham trial. The club news sheet reports that the Banbury A.C. have applied for R.A.C. inspection of a sprint course in their area, and that, with "Berko" assistance and apparatus, an opening meeting next Easter is proposed.

## ALLARD O.C. MONTHLY MEETINGS

THE Allard O.C. were pleased to see so many members at the very successful cocktail parties held at 24, Clapham High Street, during the week of the Motor Show, and announce that regular monthly meetings have been arranged from now on, probably at a different location each month. These will be notified to members in advance, and the meetings will take place on the second Tuesday of every month. The first meeting will be Tuesday, 13th November, at the "Crown Hotel", Chinnor.

## NORTH-WEST M.G. A.G.M.

AT the A.G.M. of the M.G.C.C. (N.W.), held in Manchester recently, Jack Twyford after a popular and successful period of office, handed over the Chair to Reg Holt. At the same time, Arnold Pownall transferred the Secretarial pen to Bill Woolley and Tony Knight assumed the moneybags as Treasurer. Arnold Pownall carried on manfully in spite of his own business and competition activities, plus those domestic delights which accompany a growing family, and the club wishes him a happy though not too deep period of retirement! The new Hon. Sec.'s address for all North-Western Centre affairs is W. H. Woolley, 39 Great Ducie Street, Manchester, 3.

## CITROEN NIGHT TRIAL

THE Night Reliability Trial held by the Citroen C.C. on 27th/28th October proved a great success. A total of 21 competitors completed the 240-mile route, but no driver succeeded in gaining a first class award. A report will be published next week.

## PROVISIONAL RESULTS

Best Performance: L. W. Bailey

1st Class Awards: None.

2nd Class Awards: L. W. Bailey, D. A. Toler, G. I. Gale, B. P. Halling, E. C. Looker



November 9, 1951

# PEPLOW PEP

## Lloyd-Jones Fastest in Shropshire Sprint

OVER 100 entries were received for the North Staffs M.C.'s closed invitation Speed Trial which was run over a 600-yard straight course at Peplow Airfield, Childs Ercall, near Market Drayton, Salop, on 27th October.

In all classes except that for unlimited racing-cars, competitors ran two at a time, which made the meeting all the



**TICKLISH**—Ted Lloyd-Jones unleashes the 21 litres of his "Flying Saucer" on the runway at Childs Ercall; and (left) on his way to B.T.D. in a cloud of spray



Wooldbourn's TD was over a second faster than Spence-Brown's TC in the Abingdon inter-types struggle. Basil Davenport brought out his "never say die" G.N. "Spider" for the 1½-litre blown up to 4½-litre unblown class, but had to give best to Bertie Bradnack's Cooper 1,100 with compressor.

### RESULTS

**General Classification:** 1, E. Lloyd-Jones (21,000 Triangle "Flying Saucer"), 16.0 secs.; 2, B. E. Bradnack (1,098 Cooper S), 16.7; 3, C. Heath (1,098 Cooper), 17.2; 4, W. Goodwin (4,380 Goodwin Spl. S), 18.0; 5, B. H. Davenport (2,001 G.N. "Spider"), 18.1; 6, I. Sievwright (1,990 Bugatti S) and G. Tyrer (1,996 Frazer-Nash/BMW), 19.0; 8, J. H. Webb (1,496 Alta), 19.2; 9, J. H. Turner (1,496 Alta), 19.3; 10, J. B. Swift (3,442 Jaguar), 19.6 (Driver G. W. Hawkins); 11, A. T. Norton 3,668 Mephis (Lophelgatti) and H. A. Richards (1,087 Riley), 19.9

(Continued overleaf)

more enjoyable from everyone's point of view

Best time of the day was put up by E. Lloyd-Jones with the Triangle "Flying Saucer" in 16 seconds. This time was .70 seconds better than B. E. Bradnack with his supercharged Cooper "1,100". The fastest sports-car was Gillie Tyrer's Mille Miglia Frazer-Nash in 19 seconds, while other prominent performers were Ken Downing, who won the 1,500 c.c. U/s, 1,100 c.c. S class, Charles Headland (Cooper), 500 c.c. class winner and C. Heath, who took one class with his XK 120 Jaguar and another with his 1,100 c.c. Cooper

**CLASS VICTOR:** Charles Headland's 497 c.c. Cooper-J.A.P. on the line





## Individual Class Results

**Class 1 and 2 (Sports-cars up to 1,500 c.c. U/s and 1,100 c.c. S):** 1, K. H. Downing (1,485 Connaught), 21.8 secs.; 2, R. J. L. Threlfall (1,467 Lester-MG), 22.2; 3, B. Radley (1,496 Riley Sprite), 23.2.

**Class 3 (Sports-cars, 1,501 to 3,000 c.c. U/s and 1,101 to 1,500 c.c. S):** 1, G. Tyrer (1,996 Frazer-Nash/BMW), 19.0; 2, M. F. L. Faulkner (2,500 Aston Martin DB2), 21.8; 3, P. S. Boston (2,443 Silverstone Healey), 22.8.

**Class 4 (Sports-cars, over 3,000 c.c. U/s and over 1,500 c.c. S):** 1, G. W. Hawkins (3,442 Jaguar), 19.6; 2, J. Berry (2,260 Bugatti), 20.0; 3, G. N. Mansell (3,442 Jaguar), 20.2.

**Class 5 (Standard TC or TD MGs):** 1, R. A. Gouldbourn (TD), 26.0; 2, A. Spence-Brown (TC), 27.2; 3, E. H. Whittles (TC), 27.3.

**Class 6 (Standard XK 120 Jaguars):** 1, C. Heath, 20.2; 2, G. N. Mansell, 20.4; 3, C. Heath, 20.6 (Driver B. J. Brittle).

**Class 7 (Handicap for Standard saloons or D.H. Coupés):** 1, B. Spencer (2,267 Sunbeam-Talbot), 21.77; 2, H. L. Yates (1,490 Frazer-Nash/BMW), 21.98; 3, H. E. Baker (1,971 Frazer-Nash/BMW), 22.17.

**Class 8 (Racing-cars up to 500 c.c.):** 1, C. D. Headland (497 Cooper-J.A.P.), 20.0; 2, J. W. Burgoyne (497 Cooper-J.A.P.), 20.2; 3, C. A. N. May (497 Cooper-J.A.P.), 20.7.

**Class 9 (Racing-cars up to 1,500 c.c. S or 4,500 c.c. U/s):** 1, B. E. Bradnack (1,098 Cooper J.A.P.), 16.7; 2, B. H. Davenport (2,001 G.N. Spider), 18.1; 3, J. H. Webb (1,496 Alta S), 19.2.

**Class 10 (Racing-cars up to 500 c.c. S or 2,000 c.c. U/s):** 1, C. Heath (1,098 Cooper-J.A.P.), 17.2; 2, H. A. Richards (1,087 Riley), 19.9; 3, G. Tyrer (1,996 Frazer-Nash/BMW), 20.0.

**Class 11 (Racing-cars exceeding 1,500 c.c. S and 4,500 c.c. U/s):** 1, E. Lloyd-Jones (21,000 Triangle "Flying Saucer"), 16.2; 2, W. Goodwin (4,380 Goodwin Special), 18.0; 3, Sievwright (1,990 Bugey), 19.1.

## N.W. LONDON SOCIALITIES

The committee of the N.W. London M.C. have arranged a new club permanent headquarters, and in future there will be regular monthly meetings on the third Thursday of every month at the "Mason's Arms", Maddox Street, Hanover Square, W1, starting at 7.30 p.m. At these meetings members will have the chance to get together with each other and the Committee at a "noggin and natter", which events will be well interspersed with quizzes, film shows, etc. The first meeting will take place on Thursday, 15th November, and will include a quiz contest against the Kentish Border Car Club.

The Annual Dinner is to be held at Frascati's on Wednesday, 12th December, and a well-known broadcasting band and several good cabaret acts have been booked. Tickets may be obtained from Miss P. Price, whose address is 18, Old Church Lane, NW9. Full details will be sent to members shortly.

## A.C. OWNERS' CLUB

One of the pleasures of a Club Bulletin or journal is that the editors thereof, and the contributors thereto, can freely vent their opinions on the design of cars, etc. The current issue of the A.C. Owners' Club Bulletin, for example, contains a delightfully frank review of Earls Court, and it is interesting to learn that this duplicated typescript monthly may shortly change to a properly printed journal with cover, all being well.

Cricketer John Arlott, A.C.O.C. member, will be giving a talk to fellow members at the Barley Mow meeting on 24th November.

## WELSH COUNTIES AUTUMN RALLY

On Sunday, 28th October, 21 entrants took part in the Welsh Counties C.C.'s first Annual Rally for the Cross Crouch Challenge Trophy. The course was over a distance of 135 miles and included special tests. The finish was at the St. Mellons Golf House, where the provisional results were announced as follows —

**Best Performance (Cross Crouch Challenge Trophy):** 1, H. J. Hunter (Healey), 86 marks lost; 2, L. Collins (MG), 108 marks lost; 3, A. R. Davies (Humber), 122 marks lost.

**Team Award:** D. J. Parsons (MG), L. Collins (MG) and P. Collins (Rover). Total of 405 marks lost.

## SOUTHERN JOWELL POINT-TO-POINT

The last Southern Jowell C.C. event of the season, a map reading point-to-point run, was held on Sunday, 28th October. Members of the A.C. Owners' Club and Singer Owners' Club were invited to take part in the event, and there was a total of 23 entries. Commencing at Mill Hill at 10.30 a.m., cars were despatched at minute intervals to the first map reference. Twelve further points had to be located before the lunch interval at Gustard Wood Common, near Wheathampstead.

The afternoon section took entrants through Ayot St. Lawrence, Kimpton, King's Walden and Knebworth Park to Welwyn, where competitors were checked in and a meal taken at The Cowper Arms Hotel.

It emerged that F. Marino (Southern Jowell C.C.) and P. A. Bailey (Singer O.C.) had tied for best performance with 225 points, the maximum obtainable being 260. In view of this, the overall time taken to cover the course was taken into account, Marino therefore, being awarded first prize.

## RESULTS

1, F. Marino (Southern Jowell C.C.), 225 points; 2, P. A. Bailey (Singer O.C.), 225 points; 3, M. A. Bird (Singer O.C.), 223 points.

## SNETTERTON

The Aston Martin O.C. confirm that Don Parker's time of 4 mins. 26 secs. (73 m.p.h.) in his JBS-J.A.P. in the recent Snetterton sprints gives him first place in the Formula 3 classification, instead of A. W. Richards (JBS.) who clocked 4 mins. 39 secs.

**SEMI-DETACHED:** C. A. Booker's Cooper-MG, about to lose face at Gamston during the October race meeting. Other cars are Brown's TC MG leading, and T. K. Shipside's TD.







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1st J. M. Fangio—Alfa Romeo

**WAKEFIELD TROPHY, 8th September**

1st Stirling Moss—H.W.M.

**TARGA FLORIO, 9th September**

1st J. Cortese—Frazer-Nash

**ITALIAN GRAND PRIX, 9th September**

3rd, G. Farina—Alfa Romeo

**B.A.R.C. GOODWOOD MEETING, 29th Sept.**

**GOODWOOD TROPHY**

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### THE S.S.C.C. ANNIVERSARY RALLY

THERE were 68 entries for the Scottish S.C.C.'s Anniversary Rally last weekend. This was a happy family sort of affair, more of a social event than an out-and-out competitive event.

Nevertheless there were driving tests, starting off with one in the grounds of the Autoport (not Autosport) Garage, Milngavie—Mullguy to Scots! Best performance was by W. G. G. Brand (Healey) with 23 secs. Keith Elliott (Bristol) bounced his tyres off a wall, incurring a penalty of 10 secs. and without damaging his paintwork. J. S. Clark's TD MG had a real "racer" exhaust note, and his display was characterized by his lady passenger having to hang on grimly for dear life.

The next control was somewhere in the wilds of Stirlingshire. This was followed by a simple in-and-out-of-a-gate test. Peter Goodall (Dellow) was overwhelmingly superior here with a time of 16.9 secs. The unfortunate J. N. L. Harrison (Riley) found a deep ditch, and



S.S.C.C. ANNIVERSARY: (Above) Don Fulton (Jowett Javelin) in the Milngavie test, watched carefully by marshal Pat Melville. (Left) A. McGregor Whitton (Jaguar) in the same test.



occupied over three minutes in retrieving his motor-car.

Test No. 3 comprised a forward and reverse item on a greasy hill. Keith Elliott was the star here with 26.5 secs. McGregor Whitton (Jaguar) overshot the line, and one lady competitor may have forgotten where reverse gear was located at any rate she vanished up the hill ne'er to return.

The "Anniversary" finished up at Drymen with dinner at the popular Buchanan Arms.

A. N. F.

#### RESULTS

Chairman's Cup to Winner

Anniversary Plaques to all competitors

1, P. M. Goodall (Dellow), marks lost, 70.6; 2, J. S. Clark (MG), 75.3; 3, R. M. Anderson (Morris), 75.7.

### JOINT CONFERENCE OF SCOTTISH CLUBS

UNDER the chairmanship of Alex Frew the joint conference of the Scottish clubs was held in the R.S.A.C. on 2nd November. Main business of the

evening consisted of the arranging of a provisional list of fixtures for 1952. This was accomplished smoothly and amicably with the clubs showing a willingness to co-operate in the arrangement of their dates that makes the programme look like suiting everyone—including the Press!

The provisional calendar includes three International events—S.S.C.C. Speed Hill-Climb at Boness, on 28th June; R.S.A.C. Speed Hill-Climb at Rest-and-be-Thankful, on 5th July; and a Race Meeting at Winfield, organized by the Winfield Joint Committee, on 29th July. The R.S.A.C. Scottish Rally has been provisionally fixed from 2nd to 6th June. Other interesting events are the proposed Race Meeting to be organized by the R.S.A.C. sometime in August at a venue not yet stated and the two meetings organized by the Scottish Motor Racing Club, which is very much interested in half-litre racing and hopes to have a "500" meeting in April and another in August.

Nominations for the Scottish entrants to compete in the R.A.C. Trials

Championships on 15th December were also made and the selected entrants will be: W. K. Stewart, P. M. Goodall, W. J. Lamb, Nigel Kennedy and J. E. Wilson.

### ALLEN TROPHY TRIAL AND RALLY

THE Bristol M.C. and L.C.C.'s recent event for standard cars collected 30 entries and was run over a 90-mile course in the Mendips and Sedge Moor. In all there was six driving tests and eight time checks.

#### RESULTS

Allen Trophy: J. B. King (MG, 14 saloon).

1st Class Awards: F. P. Minter (Triumph), C. L. Read (Triumph), D. V. Hardley (Jaguar).

2nd Class Awards: Dr. H. B. Logan (Humber), G. T. Williams (H.R.G.), Capt. P. V. James (Armstrong Siddeley).

Team Award: "Bogwheel Trio", F. P. Minter (Triumph), G. T. Williams (H.R.G.), P. R. Green (MG).

### THE V.S.C.C. NIDDERDALE TRIAL RESULTS

Best Performance: D. H. Coates (1930 Lagonda).

First Class Awards: L. Murray-Austin (1929 Lancia); J. G. Vessey (1928 Lancia); H. Spence (1930 Lea-Francis).

Most Meritorious Performance: J. A. R. Grice (1923 Jowett).

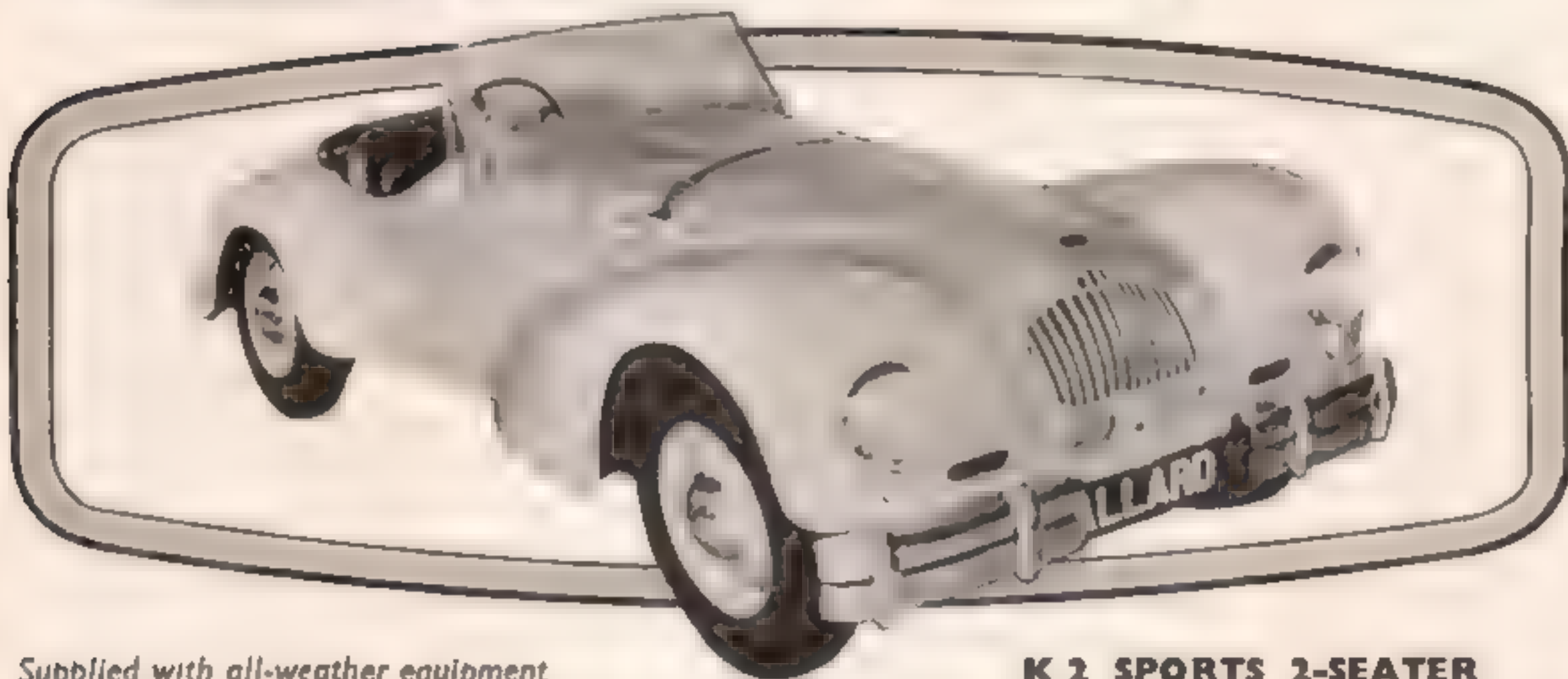
Light Car Section Award: W. L. T. Winder (1924 Humber).

Inter-Section Team Award: North: Vessey, Spence, Rutledge.





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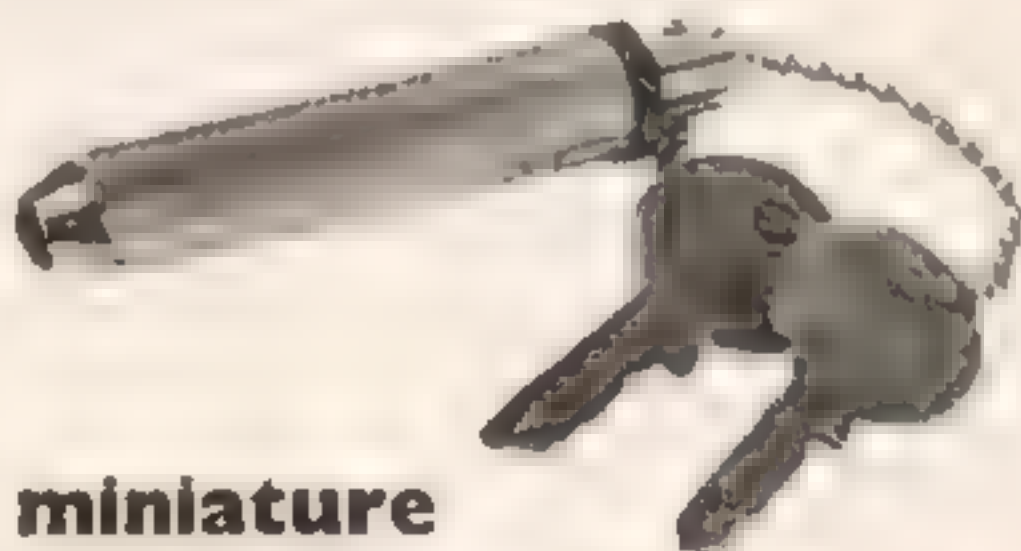
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### TOMORROW: THE "CHELTENHAM"

The Cheltenham Club's sixth Annual Cheltenham Trial takes place tomorrow, 10th November, starting at 9.30 a.m., from Miles's Garage in Andoversford, near Cheltenham. The course will cover about 50 miles, and finishes at Priory Lawn, the Club's H.Q. Clubs competing in this R.A.C. Championship "qualifier" are Bristol M.C. and L.C.C., Sunbac, N.W. London, West Hants and Dorset, Sheffield and Hallamshire, Taunton and Harrow.

### NORTH LONDON FILM SHOW

AN Esso film show reviewing 1951 Motor Sport will be staged by the N.L.E.C.C. at the Black Bull, 146, High Road, Whetstone, on Friday, 16th November, commencing 7.30 p.m. The show is open to anyone interested, free of charge, but a silver collection will be held to help defray expenses.

### A.C.O.C. AVENGE PREVIOUS QUIZ DEFEAT

AT their "last Wednesday" monthly meeting on 31st October, the A.C. Owners' Club defeated the Singer Owners' Club by 99 points to 44½ in a motoring quiz. This atones for a previous "away" defeat, and a "decider" on neutral ground is planned for the near future.

### FAST ANGLIAN SECRETARIAL CHANGE

IT is with regret that the E.A.M.C. announce the resignation as Honorary Secretary of Mr. R. K. N. Clarkson, who has, since the club's inauguration, given to his duties all the enthusiasm he has for the sport in general.

In his place the club welcomes Mr. D. M. Corder of "Avondale", Branksome Avenue, Stamford-le-Hope, to whom all future correspondence should be addressed.

### THE 33rd "GLOUCESTER"

SUPPLEMENTARY Regulations have now been issued by the North West London M.C. for the 33rd running of their classic Gloucester trial on 1st December. This is a closed invitation event, and clubs eligible to compete are Bristol M.C. and L.C.C., Sunbac, Sheffield and Hallamshire, Taunton, Kentish Border and the M.C.C. The start will be from the Bear Pools Café, Redborough Common, near Stroud, competitors leaving

### COMING ATTRACTIONS

**November 9th-10th.** M.C.C. "Daily Express" National Rally. Concluding stages (Arrival at Hastings, Final Tests and Concours d'Elegance).

**November 10th.** Cheltenham M.C. 6th Annual Cheltenham Trial Start Miles's Garage, Andoversford, 9.30 a.m.

Newry and District M.C. Trial

**November 11th.** M.G. C.C. (N.W.) Trial, Derbyshire.

**November 16th.** Cornwall Vintage C.C. Night Navigation Trial.

**November 17th.** Harrow C.C. Cottingham Memorial Trophy Trial Start Lambert Arms, Aston Rowant, 11 a.m.

Ulster A.C. Trial, N. Ireland.

**November 17th-18th.** Falkirk and District M.C. Rally, Scotland.

**November 18th.** R.A.C./V.C.C. Veteran Car Run, London-Brighton

Falcon M.C. Guy Fawkes Trial.

M.G. C.C. (N.W.) Cecil Kimber Trophy Trial.

Herts County A. and A.C. Trial, Chilterns

Severn Valley M.C. Trial, Wreckin.

Southsea M.C. Trial, Petersfield

Yorkshire S.C.C. Trial, Ripponden.

from 9.30 a.m. at one-minute intervals, to cover a 50-mile course.

Entries should be sent to W. C. Podevin at 68, Bute Street, Ilford, Essex, to arrive not later than first post Friday, 23rd November.

### BRITISH RACING MECHANICS' D. and D.

THE Annual Dinner and Dance of the British Racing Mechanics' Social Club will take place on 23rd November, at the Park Lane Hotel, Piccadilly, London, W.1. Tickets at 27s. 6d. are available from R. G. Dunn, 15 Oak Lodge Close, Queens Road, Hersham, Surrey

### CLUB FIXTURES

**Bentley D.C.**—Noggin and Natter meetings: 10th November, Northey Arms, Box, near Bath, from 7 p.m.; and at 16 Park Circus, Glasgow, C.3, from 6.30 p.m.

11th November. Swan Hotel, Bridgnorth, Salop, from 1 p.m.

12th November. Woolpack Inn, Coggeshall, Essex, from 8 p.m.

14th November. King's Head, Old Bexley, Kent.

15th November. Sutton Strathie Hotel, Sutton, Norfolk, from 7.30 p.m. and Waggon and Horses, Elstree, Herts.

16th November. Whipping Stocks Hotel, Manchester, from 6 p.m.

**Leicestershire C.C.**—Social Event, 11th November. "Tearaway" Trophy, 14th

### Twenty-four Hour Rally

—continued from page 598

Michael Brettell approached Dellow hairpin in the Ford, where a few inches of daylight appeared between the inside wheels and the road. Despite this, Brettell's time of 46.59 seconds was good enough to give him the best time in his class. In the next class Gordon (H.R.G.) with 39.02 seconds proved too good for Thurgood in a similar car (39.48 seconds). Third place in the class was taken by S. D. Guttridge (1,172 c.c. A.F.S.) (40.35 seconds), whose knowledge of the Hill helped him to vanquish the T.C.M.G.s of R. H. Lambert and Norman Button. Kemp's Healey again upheld the 2-3-litre class, and in the unlimited category, Maestro Scobey, thoroughly enjoying himself, returned the best time of the day (35.56 seconds)—which feat is not entirely unprecedented on the Cornish acclivity—against the 36.58 seconds of Shea-Simmonds. An interesting feature was the different technique employed by these two drivers, each in a 12 Allard. Scobey, whose 4,375 c.c. side-valve engine appeared to give more urge low down than Shea-Simmonds's 3,917 c.c. Ardun unit, lost time with wheelspin at the start and thereafter proceeded up the Hill in a series of controlled power slides. Shea-Simmonds, on his first appearance on the Hill, was very neat and appeared deceptively slow, over a sign of accomplished driving.

After the Rally had ended some of the competitors took the opportunity of making non-stop timed ascents during which B.T.D. was recorded by Shea-Simmonds with 29.40 seconds, being 0.26 seconds faster than the redoubtable Dennis Scobey, while Gordon's 30.40 seconds vanquished by 0.36 seconds the other H.R.G. of Thurgood.

### CECIL KIMBER TROPHY

THE Half Day Closed Trial for the Cecil Kimber Trophy will be held by the M.G. Car Club (N.W. Centre) on Sunday, 18th November, starting at 12.31 p.m. from the Main Station at Macclesfield. The course will be approximately 50 miles in length, finishing at the Dixon Arms, Chelford, in time for a hot meal at around 5 p.m.

November. Start Lee Street Car Park, 2.30 p.m.

**Jersey M.C. and L.C.C.**—Annual General Meeting, 13th November. Swanson's Hotel, Esplanade. 8 p.m.

**Aston Martin O.C.**—"Second Tuesday" meeting, 13th November The Plough, Ruislip. Meeting, 14th November. Lamb and Flag, James Street, W.1. 6.30 p.m.

**Edinburgh Univ. M.C.**—Film Show, 14th November. Usher Institute, Edinburgh.

**Vintage S.C.C.**—"Third Thursday" meeting, 15th November. White Lion, Cobham, Surrey.

**B.A.R.C. (Liverpool and N. Wales)**—Dinner and Dance, 16th November.



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**A**NOTHER success for a blown Cooper "1,000" was recorded in the speed trials at Tarrant Rushton airfield, organized jointly by the 750 M.C. and the West Hants and Dorset C.C. on 21st October. Bertie Bradnack's B.T.D. of 20.32 secs. with his Cooper exceeded by 1.01 seconds the next best time, put up by G. V. Coles's M.G. 14 Special. George Hartwell (Cooper-J.A.P.) clocked 21.54 secs., D. W. Davis's blown Magnette beat J. Sparrowe's Morgan, 23.14 secs. to 23.64 secs., and J. Hamilton-Stutt's Jaguar saloon did 25.44 secs.

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**Class 1. 750 Formula:** 1, L. West (Austin Spl.), 27.79 secs.; 2, K. S. Jeffery (Austin Spl.), 28.02 secs.; 3, G. D. Adamson (Austin Spl.), 28.09 secs.

**Class 2. Sports-cars up to 1,300 c.c.:** 1, M. C. Parrott (Buckler), 26.03 secs.; 2, M. G. Doland (M.G.), 27.05 secs.; 3, P. G. Cooper (Ford Spl.), 27.96 secs.

**Class 3. Sports-cars up to 1,300 c.c. S. 1,301-1,750 c.c. S:** 1, D. W. Davis (M.G.-Magnette S), 23.14 secs.; 2, J. Sparrowe (Morgan S), 23.64 secs.

**Class 5. Unlimited Sports-cars:** 1, D. W. Davis (M.G.-Magnette S), 22.85 secs.; 2, W. L. Cripps (Cripps Spl.), 22.99 secs.; 3, J. A. F. Cripps (Cripps Spl.), 23.18 secs.

**Class 7. Saloon-cars from 12.01 h.p.-16.00 h.p.:** 1, R. Yates (Yates Spl), 26.38 secs.; 2, D. S. Silverthorne (Ford), 29.17 secs.; 3, W. Walters (BMW), 30.76 secs.

**Class 8. Saloon-cars from 16.01 h.p.-22.00 h.p.:** 1, J. Forsyth-Grant (Jaguar Mk V), 27.60 secs.; 2, J. Hamilton-Stutt (Triumph), 27.85 secs.; 3, R. Griffiths (Sunbeam-Talbot), 28.64 secs.

**Class 9. Saloon-cars Unlimited:** 1, J. Hamilton-Stutt (Jaguar), 25.44 secs.; 2, R. P. Letcher (Railton), 26.78 secs.; 3, R. P. Letcher (Railton), 27.02 secs.

**Ladies' Award:** Mrs. E. B. Walters, 32.42 secs.

**Class 10. Racing-cars up to 500 c.c.:** 1, E. Fenning (Cooper), 22.09 secs.; 2, J. Coundley (A.E.F.-Jap), 22.70 secs.; 3, J. Coundley (A.E.F.-Jap), 25.04 secs.

**Class 11. Racing-cars up to 750 c.c. S:** and 1½-litre U/s: 1, G. V. Coles (M.G. 14 Spl.), 21.39 secs.; 2, G. V. Coles (M.G. 14 Spl.), 21.40 secs.; 3, G. Hartwell (Cooper-J.A.P.), 21.54 secs.

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**O**N Saturday, 8th December, the Herts County A. and A.C. will stage its second Nocturne, a test of navigation by night. Regulations will be in members' hands in the near future. Starting from Panshanger at a time yet to be finalized, the route will lie on Sheet 160 of the 1-in. Ordnance. Control points will be suitably embellished by "feats of imagination."

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